Issue No. 107, March 2014

We Can Not Leave Everything to God

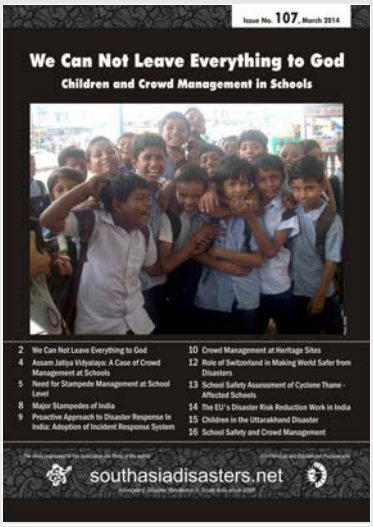
Children and Crowd Management in Schools

Photo: AIDMI.

southasiadisasters.net

Advocating Disaster Resilience in South Asia since 2005

About this issue



The tragedy at Ratnagarh Mata temple in Datia on 13th October 2013 served as a grim reminder of India's vulnerability to stampedes. This vulnerability underscores the need for effective crowd management at all levels in the country.

This issue of Southasiadisasters.net is devoted to the theme of Crowd Management. The concept of crowd management is particularly important for a country like India that witnesses a huge number of public gatherings at religious sites, political gatherings, etc. However, there is no concerted policy on Crowd Management in India. It seems that the important issue of Crowd Management has been left to the gods to manage.

Replete with views of experts from the field of disaster management, this issue provides vital information on Crowd Management policies, practices and procedures. A list of major stampedes in India has also been included.

Full of insightful articles on Crowd Management and associated areas, this issue highlights the importance of Crowd Management in the field of disaster risk reduction. ■

PREPAREDNESS

We Can Not Leave Everything to God

Stampedes at temples are not new to India. Often taking place at festive times, these totally avoidable stampedes are grim reminders of the urgent need of crowd management at the institutional level in India. The most recent stampede that took place near a temple in Madhya Pradesh's Datia district during Navaratri festivities is no different. The death toll from this totally avoidable disaster stands at 115. This means that 115 lives could have been spared a gory end if there was effective crowd management. It seems that an important activity like crowd management at temples has been left to the Gods.

Perhaps the greatest irony is the fact that Cyclone Phailin that hit the coastal parts of Odisha and Andhra Pradesh almost at the same time as the stampede at Datia, claimed only a third of the total number of lives lost in the Datia stampede. This points to the disconcerting fact that while we possess the capacity to respond to natural hazards, the same capacity is missing when it comes to responding to manmade hazards. While the real reason of the stampede is yet to be determined, unconfirmed reports suggest that the stampede took place as some people were trying to jump the queue and police used batons to control them.

The state government with the approval of the state election commission has wasted no time in announcing an ex gratia of Rs. 1.5 lakh to the kin of those killed in the stampede. The government has also announced an assistance of Rs. 50,000 for those who suffered major injuries and Rs. 25,000 to those who suffered minor injuries. However, the state government has made no announcements as to how such stampedes would be averted in the future.

One way to avoid such stampedes in the future is to use the expertise of the National Institute of Disaster Management (NIDM). The NIDM is India's leading think tank active in the field of disaster management. It frequently draws lessons from past disasters in India and around the world. Most recently it had organised a national workshop to learn lessons from the Uttarakhand floods. Many of its lesson learning events are put out into scholarly publications. What the NIDM can now do is to be proactive and find ways to anticipate disasters such as for example a stampede at Tajmahal or a fire at Jamnagar Refinery in Gujarat and offer scenarios for preparedness and response. There is an urgent need for scenario based contingency planning in India and NIDM can offer tools, trainings and methods to fulfil this need.

Another way to avoid such stampedes in future is to better utilise the National Disaster Management Authority (NDMA), India's apex authority in disaster management with the Prime Minister as its Chair. The NDMA has developed a policy study with the prestigious Indian Institute of Management Ahmedabad (IIMA) on crowd management. The study is in public domain. What the NDMA can do is to hold public consultations on the recommendation of the study with state authorities and quickly turn the study into national guidelines for managing crowds at religious places. Such national guidelines may include

response strategy, implementation plan, operational support plan and preparedness plan. A budget must also be allocated to make these plans operational. United Nations Children' s Fund (UNICEF) and Save the Children (SC) in India held such contingency planning trainings for civil society organisations and authorities in Assam and Bihar in 2012. It was found a broader involvement of citizens in the process made the plan better in terms of effectiveness. Essentially, any contingency planning ought to make all voices count.

Source: Nayi Duniya.

There is a third way to avoid such stampedes in future. The State Disaster Management Authority (SDMA) in Madhya Pradesh has made several useful initiatives in the past including involving graduate students to draw up initial District Disaster Management Plans (DDMPs) where all the involved stakeholders benefitted from the process and a better quality product—an up-to-date plan—came out. The SDMA can do similar exercise to review contingency planning in such temples and mosques in the state. This will involve five basic steps. First, enlisting hazards and conducting risk analysis; second, prioritising contingencies; third, building various scenarios; fourth, preparation of a contingency plan; and last, taking preparedness actions and updating plans. Now contingency planning is not new to India. Our District Collectors have done so even before independence of India. However, this traditional practice needs to be revived and be embedded in the administrative apparatus with up to date processes, contexts and technologies. Dr. Ashok Khosla, chairman of Development Alternatives, has initiated with success decentralised district planning in key states with such up-to-date processes and technologies.

Source: AP Photo

Stampede on a bridge across the Sindh River in Datia district in Madhya Pradesh state, India.

There is yet one more way to avoid such stampedes in future. The District Disaster Management Authorities (DDMA) in India are mostly a name, may be with a table and a clerk but without any budget or team. With United Nations Development Programme (UNDP) and NDMA help almost all DDMA have DDMPs. A national audit must be carried out to review if the DDMPs have included Crowd Management into their plan and how well it is addressed. A national review of these plans can be overseen by a Task Force set up by the NDMA in a time bound manner.

Citizens, of all religious background, must not only offer prayers to their respective Gods but also a line in writing to the temple or mosque authorities to start thinking about ways to plan and implement disaster management measures that include Crowd Management. This is in the interest of the citizens. Devotees cannot leave everything to God. God wants us to surrender our pride and ego—but not our preparedness—to His mercy. ■

– Mihir R. Bhatt

Assam Jatiya Vidyalaya: A Case of Crowd Management at Schools

The All India Disaster Mitigation Institute's (AIDMI) work with four schools in Kamrup (Metro) district in Assam has provided some key learning in this direction. One of the schools selected was Assam Jatiya Vidyalaya situated in Noonmati, Guwahati for the intervention of enhancing school safety and establish it as a "Model School" under "Model SDMP implementation Project". The school is a vernacular medium private school run by a trust. It has a huge infrastructure with multistoried buildings and more than 1000 enrollments.

On 25th of January, 2014, AIDMI resource persons with the help of the school management conducted a mass evacuation mock drill in the school to test the evacuation preparedness and the efficacy of the established evacuation routes. The evacuation drill was conducted with 1267 students and more than 50 teachers. The school community was briefed with all the rules and regulation of the evacuation drill with roles and responsibilities assigned among the teachers and students. After all the formalities completed, at 1.15 pm the Principal of the school as the incident commander signalled the bell-ringer for an alarm to indicate an earthquake has come. Everyone inside the classrooms practiced Drop-Cover-Hold during the earthquake shaking (the alarm continued for 30 seconds) and following which all the students along with their class teachers evacuated through the established evacuation routes using the three staircases to the school playground (the identified safe space).

After the first attempt of evacuation the following points came up as matter of concern-

- It was observed that despite being having three staircases, most of the crowd tried to evacuate through the commonly used staircase (the staircase that is present in the middle of the L-shaped building)
- As soon as the evacuation started some of the students were seen confused of using which staircase to evacuate to the safe space.

Photo: AIDMI.

The management of the school after proper analysis discussed these issues with the school community and plan out systematically the way to divert the crowd to each staircase. The class teachers were briefed about their respective class-wise evacuation plan and a second attempt of evacuation drill was simulated. This time the crowd was much organized and took less time to evacuate to the safe space.

The above findings brought us to the conclusion that though the school was having its established evacuation plan and marked routes but they did not put much importance to the aspect of crowd management. The fact lies here is that only with systematic crowd management planning we can have effective and fast evacuation with minimum causalities.

Measures for effective Crowd Management in Schools:

- Schools should periodically conduct evacuation drills at regular intervals
- Evacuation Maps and evacuation routes should be established and tested
- Class-wise evacuation plan should be formulated
- School community should be informed with the crowd diversion plan to be exercised during an emergency
- Proper information dissemination through effective channels of communication. ■

– Kuldip Kalita

Need for Stampede Management at School Level

Introduction

A Stampede takes place when there is panic, fear of un-known and when some action suddenly happens which is not expected. The impulsive action taken by human beings are basically to save their lives. Stampedes have been happening in schools world-wide. It is worth researching why they take place in schools from the lessons learnt from the past episodes and how best these can be avoided by taking preventive measures. This paper tries to give out a reasonable definition of stampede, recount examples of stampede in schools, gaps identified and suggest certain principles for avoidance and management of stampede. Do you know stampede was first noticed among the animals, humans followed it!!

Source: www.thehindu.com

The injured girl in the stampede occurred in Govt. Girls Senior Secondary School, Khazuri Khas, New Delhi, India.

What is a Stampede

A stampede is an act of mass impulse among herd animals or a crowd of people in which the herd (or crowd) collectively begins running with no clear direction or purpose. Animal species associated with stampede behaviour include cattle, elephants, blue-bulls, wild horses and rhinoceros.

Cattle Stampede, Causes and Remedies. Anything unusual may start a stampede, especially at night; things such as lighting a match, someone jumping off a horse, a horse shaking itself, a lightning strike, a tumbleweed blown into the herd, or "a horse running through a herd kicking at a saddle which has turned under its belly" have been known to cause a stampede. Cattle which have just fed and are more spread out are also less likely to stampede. A large stampede will frequently eliminate anything in its path. With farmed animals, cowboys attempt to turn the moving herd into itself, so that it runs in circles rather than self-destructing by running over a cliff or into a river, or from damaging human life or property by overrunning human settlements. Tactics used to make the herd turn into itself include firing a pistol (i.e. using the noise) to make the leaders of the stampede turn. Cowboys also sometimes sing or whistle at night to reassure the herd. Those on watch at night have to be careful not to do things which may startle the herd, but to ride a distance away first (e.g. before dismounting a horse or lighting a match) so as not to cause a stampede.

Human stampede and Causes. Human stampede most often occur during religious pilgrimages, professional sporting and during music events, as these events tend to involve a large congregation of people. They also often occur in times of mass panic, as a result of a fire or explosion, as people try to get away. Deaths from human stampedes occur primarily from compressive asphyxiation, not trampling. This is also referred to as crowd crush. The compressive force occurs from both horizontal pushing and vertical stacking.

Stampede in Schools and Causes. Schools are more vulnerable to both natural and man-made disasters, as a large number of children, especially under 5 years are assembled in a confined space. Stampede in school may take place, after a natural or human induced disaster, during sporting competitions, organized event when a large number of

children assemble in confined space, without the supervision of the teachers and school appointments and in schools where there is single stair-case which is small in width.

Incidences of Stampedes in Schools

1. **June 16, 1883:** Over 180 out of 1,100 children died in the Victoria Hall disaster in Sunderland, England when they stampeded down the stairs to collect gifts from the entertainers after the end of a variety show.
2. **January 11, 1908:** 16 children were killed in the Barnsley Public Hall Disaster in Barnsley, South Yorkshire, England.
3. **December 21, 2001:** 7 children, 10 to 14 years of age, were crushed to death due to a stampede on the stairway, leading to the entrance of a nightclub in Sofia, Bulgaria.
4. **October 2, 2008:** About 20 children died in a stampede in an overcrowded children's dance hall in Tanzania.
5. **September 10, 2009:** 5 girls died and 35 students were injured in Govt Girls Senior Secondary School, Khazuri Khas, New Delhi, India due to confusion over shifting of classes for the examination that led to all students taking the stairs at one go which led to stampede. Over 1400 students had come in the school to take their mid term examination. They were trying to make their way up and down a narrow stair case. It was a rainy day. The Dy Director of Education was blamed by the Judicial Commission set up to enquire about the incident and fix the responsibility for the lapses.
6. **Feb. 28, 2013:** 8 students (7 boys and 1 girl) were killed and 26 injured in Yurai Middle School in Xiangxiang City, Hunan Province, Central China. The stampede occurred when over 400 students made a beeline towards the stair case simultaneously. The stair case was only 4 feet wide. The dead were between 11 and 14 years. The school was in a 5 storey building and had 4 exits but majority of students had chosen the one close to their dormitory building because of heavy rains outside.

Source: AP

The aftermath of the fire accident at a school in Dabwali, Haryana, on December 24, 1995.

Dabwali Fire Accident

The Dabwali fire accident occurred on 23 December 1995 at Mandi Dabwali, a town in Haryana, India. The incident occurred at the Rajiv Marriage Palace in Dabwali, where the local DAV Public School was holding its annual prize distribution function. A synthetic tent, which had been set up inside the building, caught alight when an electric generator short-circuited. The fire spread quickly and blocked the main entrance; many of the deaths were caused by the resultant stampede as 1,500 people tried to escape through the single exit door. At least 400 people died in the fire, and another 160 were injured, half of them with serious burns. Some sources estimate that up to 540 people were killed, 170 of them children. Dabwali Civil Hospital was unable to cope with the number of casualties, so many of the burn victims were sent to nearby towns for treatment. In January 2003, a one-man commission was set up to investigate the incident, and to calculate the amount of compensation owed to the families of the victims. The commission, headed by Justice TP Garg took over six years to conclude its report. Compensation was eventually set at Rs 18 cr (180 million rupees), which was increased to Rs 34 Cr (340 million rupees) by the Punjab and Haryana High Court with extra 6% interest to make up for the delay. The money was to be jointly supplied by the DAV trust and the Haryana government. The court also directed for strict fire safety measures in all schools.

Prevention

At the individual level, warning signs of a crowd crush include density of more than four children per square meter, at which each child is being touched on four sides. To avoid or escape from a crowd crush, it is recommended that one should try and move sideways, particularly between swells.

There is also a need that each school should formulate crowd management policy, which should be followed for all events which can lead to stampede, like sporting

contests, music concerts, out-doors or in-doors.

The school should have more number of stair cases, depending upon the strength of the school, number of floors and size of the school. The stair cases should be at-least 6 feet wide. There should be sufficient light in the stair case during school hours.

Regular evacuation drills should be practiced to identify which classes/ sections would move down along the banister side and which one along the wall side.

Prevention is better than cure. Hence the following need to be considered while formulating school crowd management policy for the sporting events and programs organized out-doors and in-doors:

a) Teachers and others directly associated with inter scholastic program should conduct themselves in a sportsmanship spirit. Coaches representing school at inter scholastic athletic activities should be role models for the students and fans.
b) No degrading/critical remarks should be made about officials during and after a contest either at competition site, from the bench, in the locker area or through any public news media.
c) No arguing with officials or going through motions indicating dislike/disdain for a decision.
d) No detaining officials following a contest to request or argue a ruling or explanation of actions by the officials.
e) No physical assaulting or showing gestures.
f) No student should be allowed to go near the performer/s in a music or other concert.

What schools should facilitate:

a) Provide worthwhile educational experiences for all students, players and spectators.
b) Provide enjoyable recreation regardless whether the game is won or lost.
c) Knowledge about the rules of the game. Copies of the rules pertaining to sportsmanship should be made available or explained to students before a tournament, even at the cost of repetition.
d) Leadership should be provided by the faculty members of the school with the Principal leading the way and delegating authority, wherever possible.
e) For each event teachers and student appointments should be detailed for supervision.
f) The Principal should have close circuit TV of the vulnerable areas, like the gate, stairs and isolated areas in the school for constant monitoring and record.
g) Inculcate in the students mind that there were specific roles for the visiting and the host schools. Amenities and courtesies should be displayed and extended to visiting school, without flaunting the rivalries.
h) Spectators should not be allowed in the area where a contest or entertainment program is being held.
i) Detail spotters in the crowd, to forewarn about any likely troubles brewing.
j) No alcohol or other mood altering substances to be allowed.
k) Use of bells, air horn, whistles, wooden blocks and other noise makers should be allowed during in-door contests/ concerts/programs. Bands may be allowed before the start, during the breaks and after the contest is over.
l) 'Rally lines' by spectators, fans and the students on or near the playing field/during introduction of players or at any other time before, during and after a game should be prohibited.
m) Side-line barriers should be erected during all cricket, football and other tournaments and concerts.

The aftermath of the fire accident at a school in Dabwali, Haryana.

Conclusion

While the developed countries have felt the need and have formulated crowd management policies in schools to prevent stampedes, it is high time schools in India too start thinking on these lines as stampedes have been happening in India also. ■

– Brig (Dr) BK Khanna, *Senior Consultant, NDMA,* **Mrs Angeli Qwatara,** *President, Philanthrope,* **Nina Khanna,** *Research Scholar, Manav Rachna Inetrnational University, Faridabad*

Major Stampedes of India

Stampedes in India are not new. They occur routinely at religious congregations, where many pilgrims and devotees meet an ill-fated death. The most cogent reason for these stampedes occurring at places of religious significance is the lack of crowd management procedures and protocols at such places. The following table gives an overview of the major stampedes that have occurred in India.

Sl. No.	Name of the Stampede	Place	Date	No. of people dead or injured	Source
1.	Kumbh Mela Stampede	Allahabad, Uttar Pradesh	February 3, 1954	Over 800 people dead; over 100 people injured	http://www.siliconindia.com/news/general/Most-Fatal-Temple-Stampedes-in-India--nid-155500-cid-1.html
2.	Nashik Stampede	Kumbh Mela, Nasik's Godavari River	August 27, 2003	40 pilgrims dead; over 125 injured	http://www.siliconindia.com/news/general/Most-Fatal-Temple-Stampedes-in-India--nid-155500-cid-1.html
3.	High School Stampede in Central Chennai	Arignar Anna Model Higher Secondary Corporation School in MGR Nagar, in Central Chennai	December 22, 2005	42 people dead; 37 people injured	http://www.wsws.org/en/articles/2005/12/stam-d22.html
4.	Jagannath Yatra Stampede	Jagannath Yatra in Puri, Orissa	January-July, 2008	6 people dead; 12 people injured	http://www.siliconindia.com/news/general/Most-Fatal-Temple-Stampedes-in-India--nid-155498-cid-1.html
5.	Mandra Devi Yatra Stampede	Satara district of Western Maharashtra	January 26, 2005	350 people dead; 200 people injured	http://www.siliconindia.com/news/general/Most-Fatal-Temple-Stampedes-in-India--nid-155498-cid-1.html
6.	Naina Devi Temple Stampede	Naina Devi temple in Bilaspur, Himachal Pradesh	August 3, 2008	162 people dead	http://indiatoday.intoday.in/story/major-stampedes-in-india/1/126661.html
7.	Chamunda Devi Stampede	Chamunda Devi temple in Rajasthan's Jodhpur City	September 30, 2008	250 dead; Over 60 injured	http://www.siliconindia.com/news/general/Most-Fatal-Temple-Stampedes-in-India--nid-155494-cid-1.html
8.	Jehanabad District Stampede	Barabar hills, Jehanabad district, 70 kilometres (43 miles) from state capital Patna, Bihar	September 03, 2009	3 people dead; 25 people injured	http://www.sify.com/news/three-killed-in-indian-temple-stampede-report-news-national-jjdqkdcbfje.html
9.	Gangasagar Mela Stampede	Ganges river, West Bengal	January 13, 2010	7 people dead; 20 people injured	http://news.bbc.co.uk/2/hi/south_asia/8458340.stm
10.	Ram Janki Temple Stampede	Pratapgarh, Small town of Kunda, on the northern plains of Uttar Pradesh	March 4, 2010	63 dead; Over 100 people injured	http://www.telegraph.co.uk/news/worldnews/asia/india/7373068/Scores-killed-in-stampede-at-Indian-temple.html
11.	Sabrimala Stampede	Makara Jyothi Day at Sabarimala in Kerala, India	January 14, 2011	106 people dead; 100 people injured	http://en.wikipedia.org/wiki/2011_Sabarimala_stampede
12.	Bhavnath Temple Stampede	Bhavnath temple, Gujarat	February 19, 2012	Killed 6 People; Injured 40 people	http://www.siliconindia.com/news/general/Most-Fatal-Temple-Stampedes-in-India--nid-155491-cid-1.html
13.	Patna Stampede	Mishap on a bridge along the banks of the river Ganges in Patna, Bihar	November 19, 2012	14 people dead	http://edition.cnn.com/2012/11/19/world/india-stampede-kills-worshipers/
14.	Allahabad Railway Station Stampede	Allahabad, Uttar Pradesh	February 10, 2013	36 people dead	http://rt.com/news/hindu-pilgrimage-stampede-allahabad-885/
15.	Datia Stampede	Ratangarh, Datia Madhya Pradesh	October 13, 2013	115 people dead; 110 people injured	http://en.wikipedia.org/wiki/2013_Madhya_Pradesh_stampede
16.	Mumbai Stampede	Near the Malabar Hill residence of Dawoodi Bohra spiritual leader Syedna Mohammed Burhanuddin, Mumbai	January 18, 2014	18 people dead; 46 people injured	http://www.nytimes.com/2014/01/18/world/asia/india-18-die-in-stampede-in-mumbai.html?_r=0

Proactive Approach to Disaster Response In India: Adoption of Incident Response System

India is one of the world's natural disaster hotspot but our record of response to both, natural and manmade disasters in the past has not been up to the mark. However, there has been a paradigm shift in our approach to disaster management in last one decade and we have graduated from an approach of reaction to a more proactive approach of mitigation, preparedness and response to disasters, yet we have miles to go. With ever increasing population pressures, fast urbanization and unsafe construction practices disaster vulnerability in a developing country like India is on the rise. With climate change and rampant development, both the frequency and enormity of natural and manmade disasters would only increase necessitating large scale response by multiple agencies as no agency, however big can handle mega disasters single handedly. The Uttrakhand tragedy of June 2013 is a case in point. Though India has been managing disasters in the past, there are a number of shortcomings which need to be addressed. The response today has to be far more comprehensive, effective, swift and well planned based on a well-conceived response mechanism.

Disaster response is a complex exercise which entails involvement of multiple agencies and large scale resources necessitating elaborate planning, detailed coordination, management of resources and synergy amongst the responders to ensure economy of effort and optimal utilization of resources. Often enough, owing to lack of a system of pre-planning and detailed coordination, response agencies end up working in isolation resulting in duplication of efforts, critical gaps in response, turf wars and colossal wastage of both, precious human effort and resources. Hence, there is an urgent need to put a standard system in place to streamline our response to disasters across all the disaster prone states.

The Government of India, based on the recommendations of the High Powered Committee (HPC) in 2002, decided to adopt ICS (Incident Command System) as one of the best practices of the world to respond to disasters in India. ICS was developed by USA to deal with mega forest fires in California in the 70s and ever since then the system has been used world over, reportedly successfully. Accordingly, the Ministry of Home Affairs (MHA) launched pilot projects in Assam, Gujarat and Andhra Pradesh to test ICS in the Indian environment. It was felt that ICS is a response centric system and can merge with the administrative set up with relative ease. NDMA, therefore, decided to adapt the ICS duly indigenized so that it is in consonance with the administrative structure of the country to strengthen and standardize response system in India. Indigenized version of ICS is now called IRS (Incident Response System).

IRS is a system that eliminates adhocism and professionalized response to disasters. IRS is a modular system comprising of incident response team (IRT). At the apex of IRS is a 'Responsible Officer' who depending on the level of disaster could be the Chief Secretary of a responding state or an affected District Collector / District Magistrate. Depending upon the geographical spread and magnitude of the disaster, there could be more than one IRTs to respond to a disaster or multiple disasters. IRT is led by an Incident Commander who is assisted by Command Staff and General Staff in organizing response to a disaster (refer Fig 1).

Disaster response is typically a six step process – prepare, assess, plan, coordinate, implement and monitor. IRS draws on this process in totality and adopts a unified approach to eliminate gaps in response. To eliminate adhocism, IRS entails pre-nomination of various positions of

Fig 1: IRT Architecture

IRT from amongst various line departments from state / district administration to act as Command and General staff and lay down their roles and responsibilities to tackle a disaster. IRS is governed by a number of management principles viz Management by Objectives, Unity of Command &Unified Command, Chain of Command, Transfer of Command, Span of Control, common terminology and a high degree of accountability& flexibility. It is imperative that pre-nominated officials and entities are trained in IRS and put through mock exercises during preparedness phase for an effective response in times of need.

When using IRS, various responding agencies such as National Disaster Response Force (NDRF), Armed Forces units, State Disaster Response Force (SDRF), NGOs, voluntary organizations and various resources would have to be deployed in coordination with the Operation Section of an IRT. IRS can be comprehended better as a system wherein IRT acts as an engine to drive the response effort in a professional manner and various responding agencies join up as modular bogies resulting in a well-coordinated synergized approach.

National Disaster Management Authority (NDMA) has issued the guidelines on IRS titled '*National Disaster Management Guidelines- IRS*' under Section 6 of the DM Act, 2005 for effective, efficient and comprehensive management of disasters in India. The vision is to minimize loss of life and property by strengthening and standardizing the disaster response mechanism in the country. LBSNAA conducted training of trainers (TOT) in ICS from 2004 to 2008 and the MHA directed that NIDM be the nodal agency for conduct of training in IRS. MHA directed that training be conducted at two levels; on TOT basis and training of responders in respective states. Even though ICS has been adopted in India for almost a decade and formalized as IRS in 2010, the pace of institutionalization across the country is yet to pick up. IRS is yet to be utilized in a structured format to respond to a disasters in our country in spite of guidelines issued by the NDMA in July in 2010.

Though our existing system of response has worked in past, there is enough scope for further improvement. In view of ever increasing disaster risks and enormity of disasters, need to professionalize our response needs no emphasis. With IRS having been formalized at national level, our disaster prone states would do well to try out the system and ascertain its efficacy in disaster response. ■

– Col Alok Raj, Faculty of Decision Sciences, College of Defence Management, Secunderabad, India

** Certified that views expressed and suggestions made are made by the author in his personal capacity and do not have any official endorsement*

CROWD MANAGEMENT

Crowd Management at Heritage Sites

"Heritage is an essential part of the present we live in – and of the future we will build."[1]

"Heritage is something that is passed down through the generations."[2]

Heritage is the full range of our inherited traditions, monuments, objects, and culture. Most importantly, it is the range of contemporary activities, meanings, and behaviors that we draw from them.

Heritage sites are embodied in extremely fragile environments, and need to be taken care of with immense caution. One of the major threats to the heritage sites and the visitors themselves is the crowd which flocks these sites. It requires professional management interventions to cater the requirements of visitors, as well as to ensure that the integrity of the site is also kept preserved.

An Overview of Management Strategies[3]

Management strategies affecting the level and nature of exploitation of a site and its physical and socio-economic environment seek to minimise the impact of each visitor. Factors, or variables that can be affected or controlled, include the number of visitors, the types of activity, visitors' behaviour and the environment's physical and social resistance and resilience. A number of strategies address these variables: Visitor levels may be controlled by reducing the total number of people allowed at a site or reducing the number of people allowed in one or several areas of a site by dispersing them or by concentrating them in a specific area.

1 http://www.umass.edu/chs/about/whatisheritage.html
2 http://www.ballarat.vic.gov.au/heritage/about-ballarat%27s-heritage/what-is-heritage.aspx
3 http://whc.unesco.org/uploads/activities/documents/activity-113-2.pdf

Types of activities can be changed or influenced by addressing the ways in which the activity is practiced, offering incentives for people to practise particular activities or imposing direct actions to restrict certain activities. A site's physical environment may be altered to make it more resistant to impacts through the use of infrastructure.

A site's social environment can be affected by reducing conflicts among visitors and between visitors and the local community.

Management options for reducing the number of visitors to a site can include:

- restricting entry or closing an area;
- limiting group sizes;
- implementing a quota or permit system;
- increasing fees; or
- not providing facilities.

Options for dispersing or concentrating people to reduce use in a particular area can include:

- restricting the number of people who can enter the threatened area;
- limiting the permissible length of stay in the threatened area;
- raising the entrance fee for the threatened area only;
- not providing facilities in the threatened area;
- zoning an area for a particular activity and not permitting the activity in the threatened area;
- directing tourists to more resilient areas through zoning, visitor education and offering more facilities or fewer facilities;
- charging different entrance fees on certain days of the week; and
- using a promotion and interpretation campaign to influence the use of one area over another.

Site managers may encourage visitors to practise particular activities by:

- raising or lowering prices for certain types of visitors;
- restricting opening hours, e.g. opening a site early for bird-watchers or closing it early to discourage other clientele;
- offering or not offering infrastructure;
- prohibiting certain activities through regulation and enforcement.

A site's physical environment can be made more resistant to impacts by:

- using infrastructure to "harden" a site, e.g., hardening a trail with a wooden boardwalk or installing permanent moorings;
- relocating infrastructure to more resilient areas, e.g., moving a mountain refuge to an area less prone to erosion.

In India, the nature of heritage sites plays an important role to deploy the kind of strategies required for a particular site. Generally all the sites of religious importance are also equally important from point of heritage aspects. It becomes quite a challenge to manage both the issues at the same time. Sometimes a particular step taken to preserve the site works out well towards crowd management also.

Source: www.theatlantic.com

Some examples of effective crowd management at sites of massive Gatherings:

The Kumbh saw traffic towers and barricaded queues; the Lalbaugcha Raja mega gathering has learnt how to use whistle-wielding volunteers, traffic monitoring volunteers and PA systems. Volunteers dressed in easily identifiable uniforms, armed with basic communication equipment, crowd management by way of separating blocks of people, all of these are simple techniques to enforce a good level of orderliness.

Tirumala has an elaborate network of queue complexes to regulate the unending flow in a manageable mode. The queues are managed by trained staff and the complexes are under CCTV surveillance; any disturbance is addressed in seconds.

Executive director of Andhra Pradesh Tourism Development Corporation, says, "A disaster management committee has been set up at the state level. Besides, Tirumala has one of the best response actions for any such issue."

Thus, from the above examples one can easily understand that managing huge crowds is not a big task, but it requires a network of good management skills, trained team of volunteers and personnel equipped with capacity to handle catastrophic events, thorough surveillance through CCTVs and watch towers which can immediately inform about any mishaps, a well equipped control room that can deploy required number of personnel to the location and can response in time to minimize the impact. ■

– Aditya Jain

Role of Switzerland in Making World Safer from Disasters

Floods in the United Kingdom, the recent cloud burst in Uttarakhand and the volcanic eruption of Mount Kelud in Indonesia are just a few examples of recent times that drive home the devastating effects disasters can have on human settlements. Disasters also have the power to wipe out the development progress achieved through decades of investments. In this context addressing the causes of disasters and responding to them in a timely manner have been key pillars of the Swiss foreign policy.

Switzerland, primarily through the Swiss Agency for Development and Cooperation (SDC) of the Federal Department of Foreign Affairs (FDFA) promotes a three pronged approach comprising of Prevention, Reaction and Recovery to address disaster risk reduction (DRR).

Prevention

Prevention is a long term commitment wherein SDC diligently strives to integrate DRR concerns into its projects in a systematic manner. In addition to integrating DRR measures into the Project Cycle Management, SDC has also developed toolkits that integrate DRR measures into all development interventions. One example of such a tool is the recently published Climate, Environment and Disaster Risk Reduction Integration Guidance (CEDRIG). This toolkit helps development practitioners in assessing risks, evaluating them and in proposing appropriate risk reduction measures.

Reaction

In the event of major catastrophes, Switzerland has at its disposal the services of the Swiss Rescue. The Swiss Rescue is a specialized corps of the Swiss Humanitarian Aid unit which can be immediately deployed abroad primarily following earthquakes for the purpose of locating and rescuing buried victims.

Being one of the pioneers in the field of Urban Search and Rescue (USAR), Switzerland has been instrumental in the formulation of the operating guidelines of the International Search and Rescue Advisory Group (INSARAG). The INSARAG is a global network of more than 80 countries and organizations under the United Nations umbrella and deals with USAR related issues, aiming to establish minimum international standards for USAR teams and methodology for international coordination in earthquake response based on the INSARAG.

With the available expertise and experience gained through operations over the past three decades, Switzerland has been supporting countries to get their national teams classified by the INSARAG secretariat. In India, Switzerland has been supporting the efforts of the National Disaster Management Authority (NDMA) in getting a team of the National Disaster Response Force (NDRF) classified by the INSARAG secretariat.

Recovery

Soon after the immediate threat posed by a disaster is contained, the longer and more difficult process of recovery commences. Switzerland's commitment to this more challenging process has always been guided by the need to incorporate the lessons from past experiences into the rehabilitation and reconstruction

Training of NDRF personnel towards INSARAG External Classification.

process. For example, soon after the 2010 earthquake in Haiti, SDC set up a competence center for reconstruction in order to train the local workforce in the construction of earthquake-resistant buildings. In the aftermath of the 1999 super cyclone in Orissa, SDC was heavily engaged in a partnership with the Government of Orissa in strengthening the cyclone shelters for the future.

In spite of such a three pronged approach, Switzerland is aware that any true meaningful engagement in making the world safer from disasters requires the concerted efforts of the global community. With this in mind, Switzerland has been active in strengthening the international system through the promotion of DRR initiatives and coordination mechanisms and by supporting, in particular, the ISDR Secretariat (International Strategy for Disaster Reduction) in Geneva, the UNDP Bureau for Crisis Prevention and Recovery (UNDP/BCPR) and the International Federation of Red Cross and Red Crescent Societies (IFRC). Switzerland has also been active in linking and promoting DRR within the implementation of environmental conventions and other international frameworks and mechanisms, in particular the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Convention to Combat Desertification (UNCCD). ■

– **Daniel Ziegerer,** Director of Cooperation of SDC

SCHOOL SAFETY AUDIT

School Safety Assessment of Cyclone Thane – Affected Schools

The rural schools in the district of Villupuram of Tamil Nadu are exposed to multiple disaster risks. In last decade these schools have suffered massive losses from disasters such as the 2004 Indian Ocean tsunami and severe tropical cyclones such as the 2008 Cyclone Nilam and 2011 Cyclone Thane. Being located in impoverished and remote areas, and being highly under-resourced, many of these schools were in critical need of assistance during these disasters. During their response to the 2011 Cyclone Thane in Villupuram, AIDMI and Kalvi Kendra realized the need for assessing safety levels of these schools and conducted an in-depth survey of 15 schools in the blocks of Koliyanur and Kandamangalam of Villupuram with support from Cordaid.

From November 30 to December 01, 2012 the 15 schools were asked to fill out detailed questionnaires on the safety features in their school buildings, their recordkeeping systems, levels of awareness, provision of disaster preparedness and mitigation features and inclusion of disaster education in their education curricula. The assessment revealed that although schools had taken some positive steps in educating staff and students and made first-aid kits available, most of them needed additional support to strengthen preparedness levels. Some of the most urgent issues were overcrowding in classrooms, inadequate toilets, unsanitary kitchens, no safeguards against fires, and lack of planning for emergency supplies of food, water, medicine, and shelter.

Photo: AIDMI.

Understanding of school safety audit form at Panchat Union School, Narsinghpuram, Villupuram District, Tamil Nadu.

Given their remoteness and lack of resources, these schools require a substantial amount of assistance for transformation into a safer learning institutions. However, till today the assistance from government authorities and others has largely been restricted to education and awareness-raising activities and no concrete support to implement other structural and non-structural measures is made available to them. Thus, it is proposed to launch Phase II for Action to follow-up and implement, recommendations of the school safety assessment focusing on the followings.

- Develop comprehensive disaster preparedness and response plan and institutionalize regular mock drills as a part of the curricula
- Install fire safety measures and build/upgrade hygienic WASH facilities
- Provide micro-insurance coverage for all staff and students
- Where necessary, improve the structural resilience of school buildings e.g. secure ceiling beams and build concrete walls
- Train staff in disaster preparedness and first-aid, including emergency response procedures. ■

For more information, please contact AIDMI at bestteam@aidmi.org

The EU's Disaster Risk Reduction Work in India

India is one of the most disaster-prone regions in the world, exposed to an array of natural hazards including floods, droughts, earthquakes, tsunamis and cyclones. With the aim to strengthen the resilience of communities to better withstand, adapt and recover from these recurring natural phenomena, the Humanitarian Aid and Civil Protection department of the European Commission (ECHO) has been funding disaster risk reduction initiatives in the country since 2001. Indeed, ECHO realised early on that strengthening the resilience of communities was not only cost effective, but also empowering for people. Through its worldwide Disaster Preparedness programme, known as DIPECHO, it has provided over €8 million to help vulnerable communities in India reduce the impact of floods, cyclones and other natural disasters.

For example, ECHO partners have been working in the Sunderbans delta in West Bengal, which is frequently hit by floods and cyclones, putting in place village teams responsible for early warning systems, search and rescue operations, first aid, and child and women protection during a natural disaster. Each team has received specialized training and necessary equipment such as stretchers and first aid kits. Mock drills are also being organised to raise awareness amongst the villages.

A woman rescued by Search and Rescue team in West Bengal.

Photo credit: Aftab Alam

ECHO partners have helped create village teams responsible for early warning systems, search and rescue, first aid, and child and women protection during a disaster situation. Each team receives specialized training and a specific uniform to distinguish them from the others.

In regions such as Assam, Bihar or Odisha, where inundations occur on an annual basis, shelters provided over the years are designed to be resilient: they are either built on high raised plinths to ensure they remain above the water level, or made easy to dismantle, so that they can be shifted quickly - particularly for communities who reside along shifting river embankments. Tube-wells being provided are also built on elevated platforms, to ensure that they remain functional even in times of flooding.

One of the main objectives of DIPECHO programmes in India is to promote tested models so that they can be institutionalised and replicated by government authorities at a much bigger scale. ECHO partners, therefore, aim to build synergies with development partners and government agencies to ensure disaster risk reduction measures are integrated in local, state and national development plans.

ECHO has also pioneered new ways to strengthen the resilience of people. For instance, a project financed by ECHO in Puri district of Odisha has helped several hundred families claim for compensation after their houses were destroyed by Cyclone Phailin in October 2013. Concern Worldwide, which conceived the project, had helped insure the crucial assets of almost 1,000 most vulnerable families, including their houses, against disaster losses with an India-based insurance company.

In 2013, ECHO launched DIPECHO's Seventh Action Plan for South Asia, which covers 20 projects totalling €12.6 million. Implemented through 45 partners, these projects are spread throughout the region, in Nepal, Bangladesh, Sri Lanka, India, Pakistan, Afghanistan and Bhutan. Since 2001, it has allocated over €50 million for disaster preparedness activities in the South Asia region. ■

– Arjun Clair,
ECHO, New Delhi

Children in the Uttarakhand Disaster

The June 2013 floods in Uttarakhand have had an extremely detrimental impact on children, adolescents and students. The fact that schools suffered the most damage as compared to other government structures in the indiscriminate fury unleashed by the floods speaks volumes about the indifference and disregard that schools regularly are subjected to at the hands of the local administration. The school building policies and disaster mitigation programmes of the state government are equally culpable for this plight of schools in the state.

The Uttarakhand disaster has exposed the vulnerability of children and adolescents by adversely affecting their education and health. Although the official count of children orphaned by the floods stands at 13, in reality, many more children have been pushed into a semi-orphaned state of existence due to this disaster. This can be blamed squarely on the adverse impact that this disaster had on the livelihoods of many families, particularly those that earned their bread through tourism around the pilgrimage sites. This is manifest by the poor performance of the children of the affected families in the aftermath of the disaster on all parameters of health, education and upbringing. Thousands of children from the districts of Pithoragarh, Bageshwar, Chamoli, Rudraprayag, Chamoli and Uttarkashi have been dealt a similar card by fate.

The figures of the damage to schools aver to this sad tale. The Uttarakhand disaster damaged more than 873 schools, out of which 176 were completely raised to the ground. Most of the damaged school buildings still lie in a state of disrepair leaving the education and future of children who attend them utterly precarious. The detrimental impacts have been particularly pronounced on Primary and Junior High Schools. In Chamoli, out of the 1142 schools in the district 98 were damaged by this disaster, with more than 38 schools being completely levelled. Similarly, in Rudraprayag, 87 schools were damaged with 57 being completely obliterated. The damage suffered by schools had a direct impact on children by disrupting their education for weeks. Gradually, as these schools resume operations, the teachers note that the ability of children to understand and internalize has taken a severe blow.

To mitigate the impacts of this disaster on children, it is imperative to frame mitigation and rehabilitation policies that incorporate the perspective of children. The first step towards this ideal should be the building of resilient school buildings. Pre-fabricated techniques for school building that are quick and safe and lead to lighter structures is an approach that could be flowed. Unfortunately, no such effort has been undertaken as of now.

Since destroyed livelihoods mean a loss of income that translates to education disruption and inadequate upbringing support to children, therefore there is an urgent need to work out a livelihood restoration and rehabilitation strategy in Uttarakhand. Many voluntary organizations have recognized this and have started providing vocational training to the people of the affected areas to improve their livelihood prospects. But there is still a lack of a concerted long term policy on livelihood recovery.

It is an inconvenient truth that had laws relating to child labour not been flouted with such impunity, no children would have been employed on the precarious slopes of Kedarnath to ferry pilgrims about and consequently no children would have perished in this terrible disaster. The issue of brazen violation of laws related to child labour has yet to capture the popular imagination, perhaps it is a manifestation of the deep entrenchment of child labour in our society. Perhaps this is why we consider it normal for children to perish working when they should have been enjoying the pleasures of childhood. In this way his disaster has also exposed our capacity for callousness.

The only way to redeem ourselves is to work towards building a world which holds the promise of a safe and happy future for our children. This is the only way to commemorate the memory of all those children who perished in this catastrophe. ■

– Omprakash Bhatt,
Sarvodaya Centre, Gopeshwar,
Chamoli, Uttarakhand

MAKING SAFER SCHOOLS

School Safety and Crowd Management

Schools are considered potent hubs of capacity building for children as they nourish the future of any country. These are the place where children of a nation acquire skills which equip them to face the challenges of adulthood. Since, a school may house many children at a time and since these numbers translate into huge gatherings and congregations at schools, therefore proper procedures and practices to regulate such crowds becomes indispensable.

Crowd Management is an important aspect with respect to school safety which cannot be undermined in any respect. Schools are vulnerable to different disasters like earthquake, stampede, fire accidents etc. which needs to be handled with effective crowd management skills. The aspect that raises the concerns may be with different age groups of the students, the level of understanding, numbers of total students (enrollment) in the school, level of preparedness etc. Here we need to mention the role of an effective evacuation plan with a systematic crowd handling plan in the school. A well designed evacuation route and floor-wise evacuation map plays a vital role in the safe and fast evacuation of the school crowd.

Management of crowd is such an aspect of the larger whole which becomes a necessity for the safety of children. Generally, safety is looked at from the point of view of threats or hazards which are defined as potential causes that can bring in injuries and life loss as well as damage to infrastructure. However, having said so stampede forms the top priority in almost all settings where crowd gathering is involved either occasionally or frequently. But a school is a place where crowd gathering of minors is a routine phenomenon. Each school has set up its own system of controlling and guiding the behavior of crowds of children whether during assembly hours or at any other function. However, when emergency incidents are considered, it becomes essential to chalk-out the formalities with proper standard operative procedures (SOP) in this regard. Crowd Management is expected to look at all possible ways that can avoid such a chaotic situation.

Mock Drills (a simulation drill of a real situation of an emergency) provide schools with an opportunity to visualize images of emergency scenario and how crowd will move and open up an opportunity to strengthen the crowd management and evacuation plans. Discipline and control, system and coordination, responsibility and leadership are key concerns for effective crowd management planning in schools. The ability to visualize and handle nerves when crowd are left with panic, hue and cry requires skill, confidence, decision making power and self belief among those responsible. ■

– Kuldip Kalita

Do you wish to receive this publication regularly? Write to AIDMI (bestteam@aidmi.org). The publication will be sent by E-mail. Your comments help *southasiadisasters.net* remain an effective and informative resource for regional issues of disaster risk management. Please contribute comments, features, reports, discussion points, and essays about your work. Today!

unicef
unite for children

AIDMI is delighted to receive generous support of UNICEF (India) towards this issue.

ALL INDIA DISASTER MITIGATION INSTITUTE

411 Sakar Five, Near Natraj Cinema, Ashram Road, Ahmedabad–380 009 India. Tele/Fax: +91-79-2658 2962
E-mail: bestteam@aidmi.org, Website: http://www.aidmi.org, www.southasiadisasters.net