

HOW SAFE ARE OUR KIDS?

Baseline summary report



HONEYWELL
SAFE
SCHOOLS



Supported by

Honeywell
THE POWER OF **CONNECTED**

Introduction

SAFER SCHOOLS CREATE SAFER COMMUNITIES

A school is more than a building. It is a place for children to learn, to play, to be inspired, and to be safe. Yet, in the event that the children's safety is compromised, how well prepared are we?

SEEDS, in collaboration with Honeywell India, undertook a baseline study to understand school safety in Delhi. It provides a sound basis for understanding the nature of risk in Delhi's schools, the community's perception towards risk, and to determine remedial measures.

BASELINE METHODOLOGY

A detailed assessment was carried out to establish a baseline of the school safety scenario in Delhi. The study used spatial data analysis through Geographical Information System (GIS) tools, campus level assessments conducted by expert architects, participatory assessments by social science and media specialists, and validated data from the government. Having done so, it zeroed in on the most vulnerable area of East Delhi. Thereafter, primary data collection was undertaken in East Delhi, through various tools, including focus group discussions, transect walks, and key informant interviews. The, 1035 responses on perception of risk and understanding of safety measures are reflected throughout the analyses given in this report.

The baseline identifies potential high risks related to natural and manmade hazards such as earthquakes, floods, fire accidents and infrastructure-failure.

UNDERSTANDING RISK PERCEPTION

Field surveys and interactions carried out for this study indicate that some hazards, though technically high, are often not recognized as priority concerns by children, parents and teachers. It has to be underscored here that many of these risks relate to disasters that may happen after a huge time lag, and, therefore, there is no strong recall. Participatory assessments reveal startling facts around the lack of basic awareness, and the poor involvement of parents in safety-related issues in schools.

FIFTY PRIORITY SCHOOLS

The study has helped identify 50 priority schools in East Delhi in which safety interventions will be carried out.

These 50 priority schools will be the focus of our intervention Honeywell Safe Schools, which seeks to ensure children go to school without fear, remain safe in school, and return home safely.

The program, therefore takes a comprehensive approach to school safety. This includes safety of the building, students' journey to school, child protection issues, awareness, and training on disaster risk reduction and emergency response. This will be done through interactive sessions, mock drills, peer-to-peer learning, and non-structural mitigation.

Key facts

BASELINE KEY FINDINGS

- 69 percent children walk to school, usually unaccompanied.
- Parents fear road accidents and bullying most. They do not even recall natural calamities such as floods, earthquakes as hazards.
- Most parents attribute loss of life and suffering to inadequate response systems; but, ironically, 99 percent people are unaware of any helpline.
- Respondents blame inadequate response systems’ but not lack of community preparedness.
- Only seven percent respondents were aware of the school disaster management plan mandated by the government.

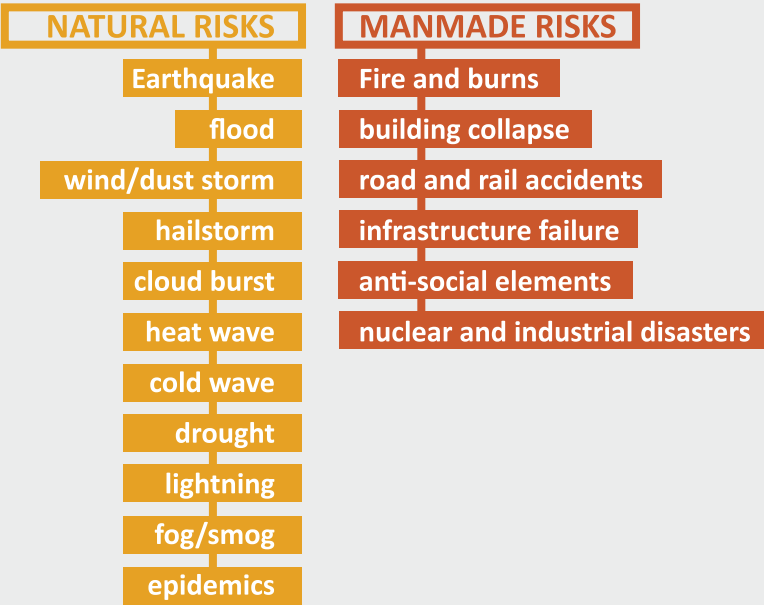
SECONDARY DATA POINTS

- 3,007,010 students are enrolled in 5751 schools in Delhi.¹
- 53 percent schools are at highest risk from earthquakes, including all 624 schools in East Delhi.
- 316,321 students in East Delhi are at risk, as their schools fall in the Yamuna flood zone.
- 725 Delhi schools lack playground / open space for evacuation.

¹ Source: Delhi State Elementary Education Report Card, 2015-16, NUEPA

Delhi: A hazard-prone city

As the national capital and a busy landlocked city, Delhi’s hazards are often seen in terms of fog and smog only. Yet, the physical, geological, and spatial setting of the place also makes it vulnerable to many other natural and manmade hazards.



Added vulnerabilities

With mountains to the north and a desert to the west, Delhi experiences extremes of heat and cold. Through the year, the city witnesses extreme weather phenomena, including wind/dust storms, heat and cold waves, cloud bursts, hailstorms, and fog/smog. With the change in season comes a host of vector-borne diseases such as dengue and chikungunya. All of these bring different safety challenges and risks.

Rapid urbanization has led to significant industrialization. Cottage industries operate in congested areas, with hazardous and non-hazardous industries in close vicinity.

70 percent fires are attributable to electric short circuit. More than 1,200 slum clusters house nearly a third of the total population of Delhi. This increases the city’s vulnerability to fires, and has an adverse impact on response time.

Unplanned expansion, which that does not match supporting infrastructure, poses risks such as building collapse, inadequate law enforcement, and accidents.

According to a 2015 government report, Delhi accounted for most deaths due to road accidents, many among them children. The same report put the total number of children killed in the road accidents across India at 15,633.²

East Delhi is especially vulnerable to disasters

- It lies on the banks of the Yamuna, susceptible to breaches.
- There are few buffer zones and highly dense built up areas.
- Population density is extremely high.

² <http://www.hindustantimes.com/india-news/death-trap-road-accidents-killed-400-people-every-day-in-2015/story-7e51K9OXJxx3IUu61nByH.html>

High earthquake and flood risk

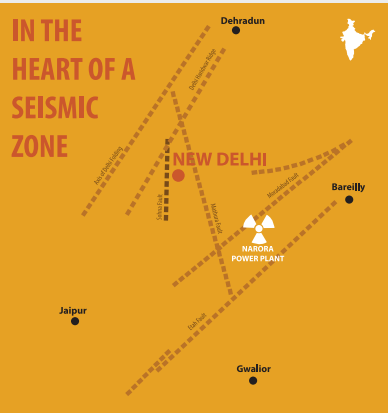
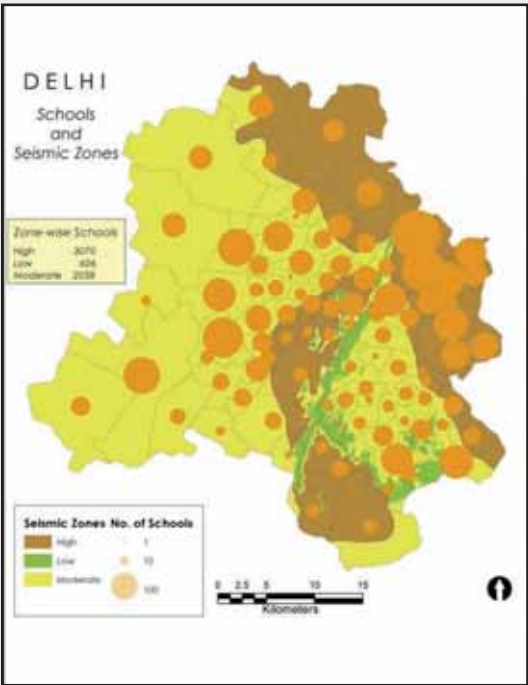
Delhi is at high risk from two natural hazards that could lead to major disasters – earthquakes and floods. However, since no major flood or earthquake has occurred in the recent past, recall and awareness among the population on the associated risks are low.

Earthquake

The terrain of Delhi is mostly flat, which gives the perception that risk from earthquake is low. However, per the seismic zoning map of India, Delhi falls in Zone - IV. As many as 20 potential faults have been identified within 300 km radius around Delhi.

Additionally, a close look at the seismic micro-zonation map of Delhi shows that there are certain factors that play a crucial role in determining the magnitude of risk from earthquakes. These include settlement pattern and geological characteristics such as depth of alluvial soil. In fact, the impact of an earthquake in Delhi would be compounded due to liquefaction, physical location, and hydrogeology details.

3,070 schools across Delhi lie in a high seismic zone, including all schools in East Delhi.

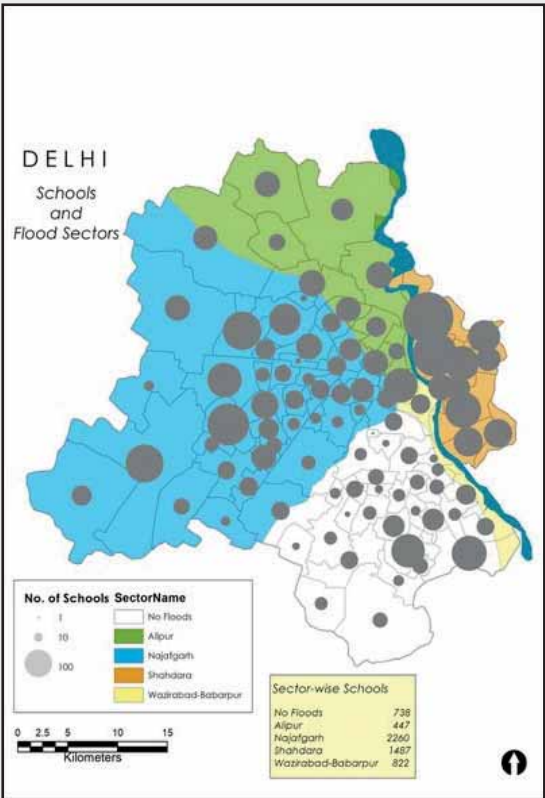


Two major lineaments, namely Delhi-Haridwar ridge and Delhi-Moradabad faults, pass through the territory. Narora Nuclear Power Plant lies 110 km from Delhi on the Moradabad fault and poses a nuclear threat in Delhi, should an earthquake occur.

53% schools in Delhi are at highest risk from earthquakes, including all 624 schools in East Delhi

Flood

The Yamuna runs through Delhi, covering a distance of 50 km, and is also fed by the city's drainage system. The city's topography is such that rain and storm water from the elevated western part of the city flow into the Yamuna in the east, which is in a low-lying area. The Yamuna floodplain has witnessed rapid and unplanned construction, and today supports around one-fifth of the city's population. This low-lying area is submerged in water even after a short spell of rain, disrupting life and causing distress.



The maximum concentration of schools is in the Shahdara flood sector, which is one of the most flood prone areas.

316,321 students of East Delhi are at risk as their schools fall in the Yamuna flood zone!

Local flooding is a phenomenon which has been increasing in recent years. Development patterns with impervious surfaces (roads, pavements, houses, etc.) and the loss of natural drainage channels leads to high rates of surface water run-off. This results in flash floods in low-lying areas even after moderate rainfall. Additionally, the Yamuna is already flowing at a higher level within its embankments. When water gets logged in the city, it takes several days to mechanically pump it out and bring the situation under control.

Similarly, over the past few years, flooding due to the city's 18 major drains has also become commonplace. Already under the pressure of the city's effluent discharge, these drains experience reverse flow from the Yamuna and, as a result, they tip their banks, flooding the neighbouring areas.

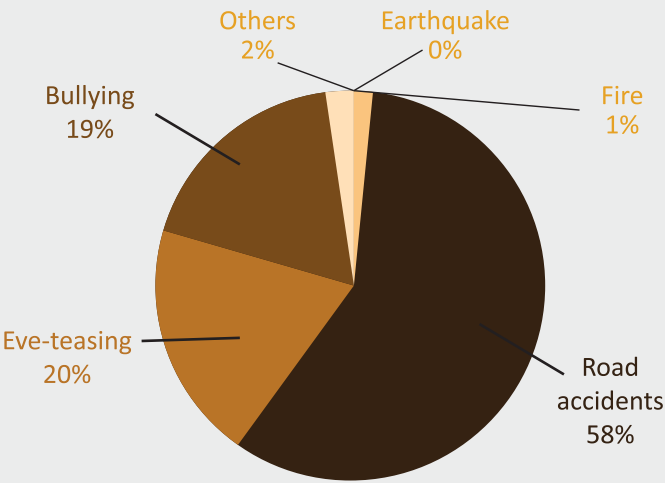
Primary research findings on perception and understanding of risk

Apart from the prevalent hazards in Delhi, there are a number of day-to-day stresses that add to the vulnerability of children going to schools. In our study, we covered 1,035 parents, teachers and principals across Delhi, particularly East Delhi.

What parents worry about the most

In our interactions with parents, we asked them what they perceived as the greatest risks their children face. Rather than prevalent hazards such as earthquakes or fire, the concept of risk among people in Delhi is dominated more by what they experience on a day-to-day basis. The study shows that parents fear the risk of road accidents the most, followed by the fear of their children being bullied and teased.

FIG. 1: WHAT RISK DO YOU FEAR MOST FOR YOUR CHILDREN



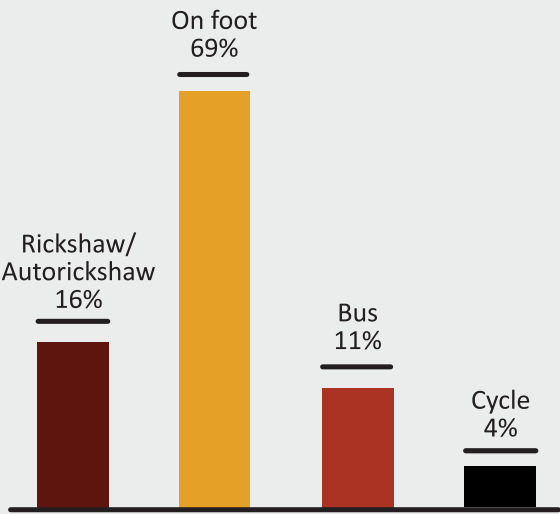
For a school-going child from a low-income household, the issues and concerns of safety in the immediate neighbourhood, and those in the school and outside its campus, are equal. The child is most likely to attend the local municipal school and tuition centres closest to home.

58% parents feared road accidents as the greatest risk their children faced

Road accidents: Spotlight on the journey to school and back

Since a majority of respondents perceive road accidents as the greatest risk children face, it was important to find out how children actually commute to school every day. The study shows that a majority of children walk to school – usually unaccompanied – thereby increasing fears of accidents, eve-teasing, and abduction.

Fig 2: HOW DO CHILDREN GET TO SCHOOL AND BACK?



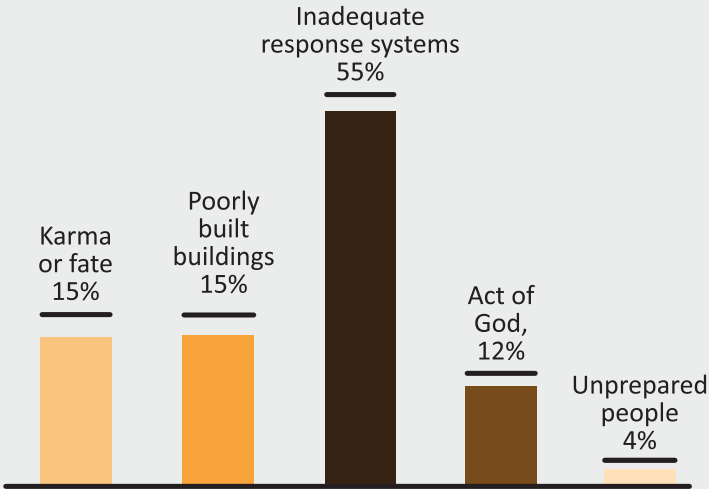
“School is a safe space for my child...[But]I do feel scared as he makes his way to school, on the road – I imagine [my son] being hit by a car on the way; someone bullying him and snatching his money away, or worse, maybe even taking him away.”
- Noor Fatimah, 28, Mason, Ghevra village, Delhi

69% children walk to school, usually unaccompanied

Preparedness versus response

A significant majority of parents do not perceive the lack of preparedness on the part of communities as a major contributing factor to losses in the face of a disaster. Overwhelmingly, they attribute losses to inadequate response systems.

FIG. 3: WHAT CAUSES LOSSES DURING DISASTERS?

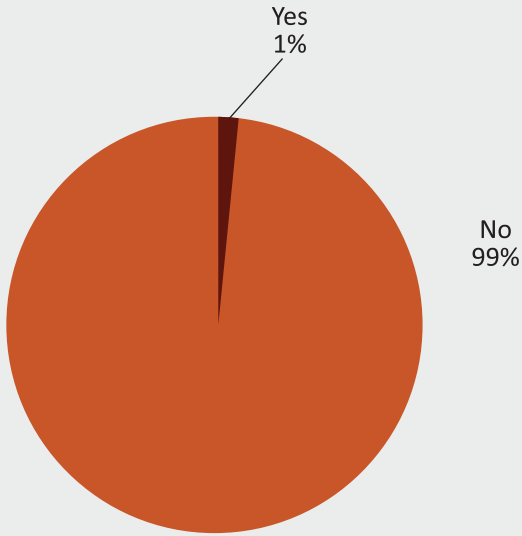


55% parents attributed disaster losses to inadequate response systems

Reaching out for help

Timely assistance in any disaster saves many lives and property. Knowledge of disaster helplines allows people to call for immediate help. While a majority of respondents attributed losses during disasters to inadequate response systems, the knowledge of such response systems was actually abysmally low.

FIG 4: ARE YOU AWARE OF THE SPECIFIC DISASTER HELPLINE

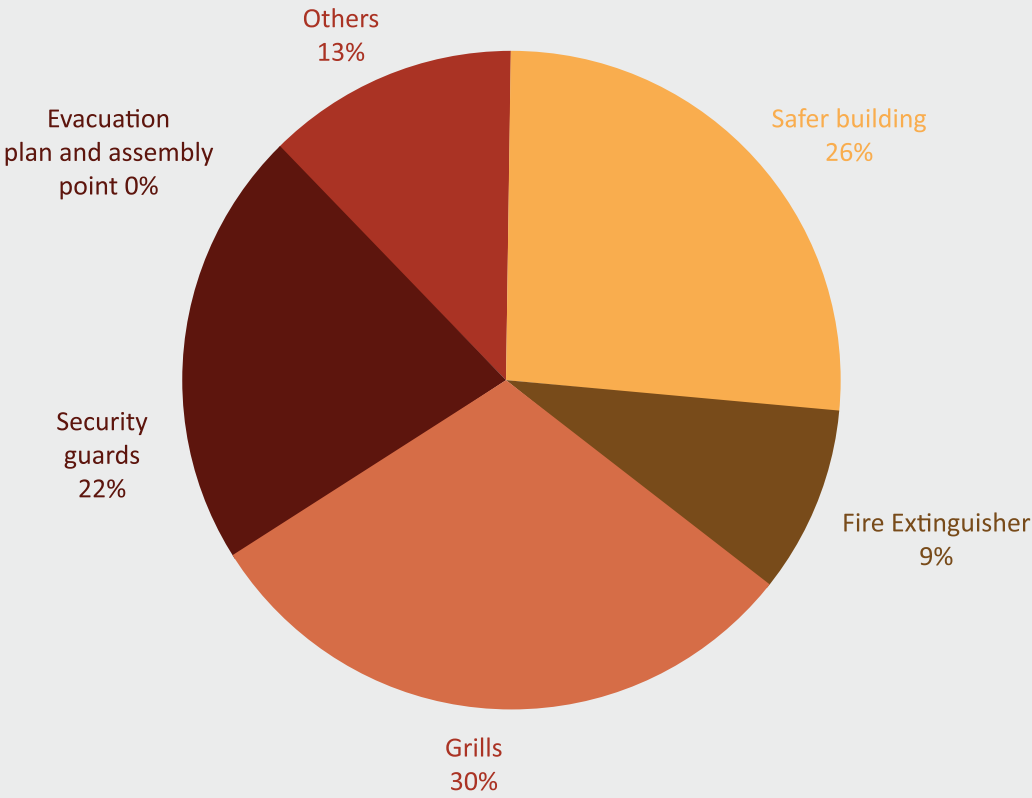


99% people are not aware of disaster helplines

Parents’ perception of a safe school

We asked parents what safety features they would like to see in school. A majority think installing grills, making buildings safer, and deploying security guards are most critical. Awareness of other elements such as evacuation plans was low or not perceived to be important.

FIG. 5: SAFETY FEATURES PARENTS WANT TO SEE IN SCHOOLS



Do you know the emergency numbers?

1077 – Disaster helpline

100 – Police

101 – Fire

102 – Ambulance

1098 – CHILDLINE

1096 – Anti-stalking helpline

1291 – Senior citizen helpline

1091 – Women’s helpline (Delhi Traffic Police)

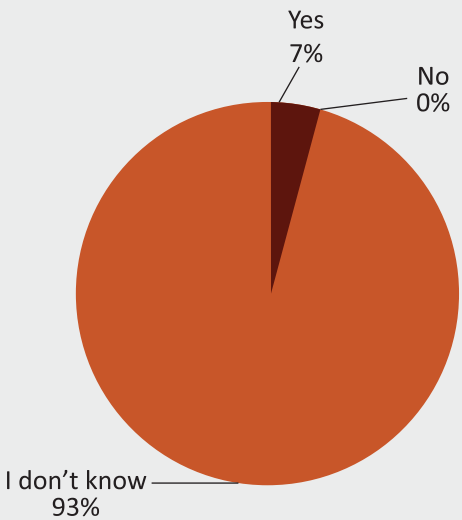
1095 – Traffic helpline (Delhi Traffic Police)



Parents’ understanding of school disaster management planning

As part of the National School Safety Policy Guidelines, schools are encouraged to put a School Disaster Management Plan (SDMP) in place. This defines procedures to confine, contain, consolidate, and control any emergency or crisis. Clear roles and responsibilities are allocated. Many schools have already begun doing this. Although the process is designed to be inclusive of the larger school community, very few parents are aware of the presence of an SDMP in their child’s school.

FIG. 6: ARE YOU AWARE OF AN SDMP IN YOUR CHILD’S SCHOOL?



Essential elements of a School Disaster Management Plan (SDMP)

- Hazard and vulnerability assessment
- Building safety (structural measures)
- Building safety (non-structural mitigation)
- Evacuation planning
- Formation of task forces
- Mock drills
- Emergency kits
- Hazard hunt
- Standard operating procedure
- Training and capacity building
- Awareness
- Education continuity plan
- Management of emergency equipment and materials

“Most of the injuries that happen in earthquake-like situations, and even during fires, are not because of the calamity, but because people push and pull, and struggle with each other to get out first. People, especially children, get pushed to the ground and are trampled.”
– Virendra Kumar, Fireman, Palika

93% of parents do not know whether their child’s school has a disaster management plan

Conclusion

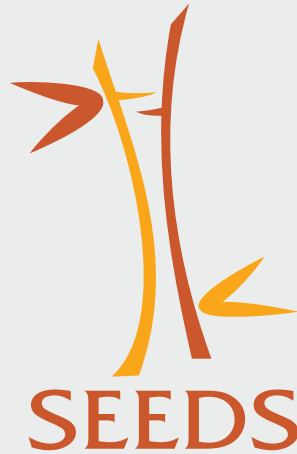
The baseline study reveals perceptions about safe schools, and reflects the low level of awareness on risk perception, disaster preparedness, and response.

Honeywell Safe Schools is a pioneering school safety program that brings a tailor-made approach to address the unique issues of each school or location. It involves structural assessment of each school by engineers and architects; evaluation of risk perception among children, teachers, and parents; and examination of preparedness in the face of any natural or manmade disaster.

Honeywell Safe Schools, through its inclusive approach, will ensure children go to school without fear, remain safe in school, and return home safely.

References

1. The Report of High Powered Committee on Disaster Management, 2001. National Centre for Disaster Management, Govt. of India. Weblink: http://nidm.gov.in/PDF/pubs/HPC_Report.pdf
2. Delhi State Profile, National Institute of Disaster Management. Weblink: <http://nidm.gov.in/PDF/DP/DELHI.PDF>
3. District Disaster Management Plan Delhi: <http://delhi.gov.in/wps/wcm/connect/35dfb2004c8bc1c0b707bf1dc8ddc224/Chapter+III.pdf?MOD=AJPERES&Imod=2072771721&CACHEID=35dfb2004c8bc1c0b707bf1dc8ddc224>
4. Delhi at Risk: A Preliminary Assessment of Delhi’s Vulnerability to Natural Disasters, 1996. Sustainable Environment and Ecological Development Society (SEEDS).
5. Road Accidents in Delhi, 2015. Accident Research Cell, Delhi Police: Traffic, New Delhi. Weblink: <https://delhitrafficpolice.nic.in/about-us/road-accidents-booklet-2015/>
6. Comprehensive School Safety: A Global framework in support of The Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector and The Worldwide Initiative for Safe Schools, March 2017. Weblink: <http://gadrrres.net/resources/comprehensive-school-safety-framework>
7. Let’s make schools safer, Sustainable Environment and Ecological Development Society.
8. Ahmedabad Action Agenda for School Safety, 2007 Weblink: <http://www.preventionweb.net/educational/view/5146>
9. School Report Cards 2015-16, National University of Educational Planning and Administration. Weblink: <http://schoolreportcards.in/SRC-New/>
10. Delhi School State and District Report Cards 2015-16, District Information System for Education. Weblink: <http://udise.in/src.htm>
11. National Disaster Management Guidelines – School Safety Policy -February 2016, National Disaster Management Authority, Government of India.



15-A, Institutional Area,
Sector 4, R. K. Puram,
New Delhi- 110022

Tel: +91 11 26174272

Email: info@seedsindia.org

Web: www.seedsindia.org



Supported by

Honeywell

THE POWER OF **CONNECTED**