

JULY 2020



AAPDA SAMVAAD



Managing Urban Floods

India at BRICS



India reiterated her commitment to international cooperation during the meeting of BRICS Joint Task Force on Disaster Risk Management (DRM) on 30th July 2020. Indian participants included Shri G.V.V. Sarma, Member Secretary, NDMA; Lt. Gen Syed Ata Hasnain (Retd.), Member, NDMA; Dr. Mohapatra, DG, India Meteorological Department. The meeting focused on using modern technology as the main tool for preventing and forecasting the evolution of emergencies and organisation of communication at interaction of Fire and Rescue.

Speaking at the meeting, Shri G.V.V. Sarma, Member Secretary, NDMA highlighted India's stance, "With the enactment of Disaster Management Act in 2005, India has moved away from a response centric approach and oriented all its actions towards a holistic participatory and all inclusive strategy for disaster management, giving stress on community based disaster risk reduction."

BRICS Joint Task Force for DRM was formed in 2016 to for better cooperation between member nations in sharing and

dissemination of risk and climate information, training and exchange programmes for stakeholders, and joint exercises on disaster response and recovery planning.

Meeting of Expert Group on Thunderstorm & Lightning



On 20th July 2020, NDMA conducted the 1st meeting of the Expert Group on Thunderstorm & Lightning to discuss the implementation of an action plan in NDMA's Guidelines on thunderstorm and lightning through video conferencing. The Group examined present scenarios, early warning infrastructure, implementation of long-term mitigation measures and documentation of best practices.

Incident Response System (IRS) Training and Table Top Exercise

NDMA regularly conducts mock exercises to prepare all stakeholders involved in disaster management. To continue the same during COVID-19, the subsequent Table Top Exercises and IRS Trainings were conducted via video conference, involving stakeholders from multiple districts.



- On 1st July 2020, NDMA conducted an IRS Training and Table Top Exercise with 75 districts of Uttar Pradesh towards flood preparedness. Lt. Gen Syed Ata Hasnain (Retd.), Member, NDMA gave the opening address for one of the biggest virtual training for the state of Uttar Pradesh. U.P. became the first state to take the initiative to conduct training before the flood season.



- prone districts of Kerala, namely, Kannur, Thiruvananthapuram, Kollam, Kozhikode, Alappuzha, Malappuram, Ernakulam, Kasaragod, Thrissur via video conferencing on 24th July 2020. Similarly, another IRS Training & Table Top Exercise on Landslides took place on 27th July for 5 landslide prone districts of Kerala, namely, Wayanad, Idukki, Palakkad, Kottayam, Pathanamthitta.



- On 9th July 2020, NDMA held a coordination conference for a multi-district Mock Exercise in Haryana covering seismic zones. NDMA guided the Incident Response Teams of the State in updating their plans & resource inventories and reallocating their roles & responsibilities.
- To enhance preparedness for floods, NDMA conducted a multi- district online IRS Training and Table Top Exercise in 9 flood



- To enhance preparedness for floods NDMA conducted a multi-district online IRS Training and Table Top Exercise in 17 flood prone districts of Chhattisgarh on 29th July 2020. The districts included were Bijapur, Dantewada, Sukma, Kanker, Narayanpur, Bastar, Kondagaon, Raigarh, Janjir Champa, Mungeli, Bilaspur, Rajnandgaon, Durg, Mahasamund, Dhamtari, Baloda Bazar, Raipur.

Saving Our Cities

Overcoming urban flooding through community efforts



On a cloudy Thursday morning, 42 year old Mr. Nayak (name changed) began his journey from his home to his office in Mumbai. The meteorological agencies had been forecasting heavy rainfall since early week. According to the forecast, heavy rainfall was to coincide with a high tide situation. Little did he know that ignoring the warnings would make him a victim of urban flood. He was stuck in traffic for 7 hours due to extremely heavy rainfall. On the same day, it was reported that a person went missing in flood waters. Of late, urban flood has become a pertinent issue in cities across the world.

Urban flood is caused by three main factors – meteorological, hydrological and human. Meteorological factors include heavy rainfall, cyclonic storms and thunderstorms; hydrological factors include presence or absence of overbank flow channel networks and occurrence of high tides impeding the drainage.

Human activities such as - land use changes, surface sealing due to urbanization which increases runoff, occupation of flood plains which obstructs natural flow, lack of drainage, sudden release of water from dams located upstream of citizen towns, the failure to release water from dams resulting in backwater effect, the indiscriminate disposal of solid waste into urban water drains and channels creating



an impediment to water flow during the monsoon season - majorly contribute to urban flooding.

Concrete jungles, as urban areas are sometimes referred to, have little open soil to enable underground water replenishment. High intensity rainfall can lead to urban flooding in a matter of minutes especially when the city sewage system and draining canals do not have the necessary capacity to drain the amount of rain water falling. Rainwater may even enter the sewage system from one place and then overflow somewhere else in the city.

Effects of an urban flood and prevention efforts by the community

Floods disrupt the day to day activities in cities. Even when the flood waters recede, they leave behind an increased chance of disease outbreak such as malaria, cholera, dengue (and now COVID-19) etc.

In this regard, the role of the community is critical to spread awareness about the possible disaster in their area. Community engagement programs, workshops, awareness generation activities, technical audits etc., help in improving capacity-building of communities. Preparation and prevention tips shared via different communication channels such as radio, television, print and social media and making children aware of the impacts of urban flooding at school via syllabus, safety drills etc., also contribute to making a flood-resilient community.

Resident Welfare Association meetings, Basti Committees, Self Help Groups, youth clubs, NGOs and other social-cultural organisations which focus on safety during disasters, help in sharing valuable information and persuading individuals to take up the responsibility of proper waste disposal and effective water management.

The occurrence and impact of urban floods can be reduced with a systematic approach. Though much is needed to tackle the issues related to governance and enforcement, such, at the community level, each city dweller can do his/her bit.

What is the role of an individual?

The first step while combating any disaster is to ensure that one is aware and prepared for that disaster. To prevent an area from urban flooding, it is important to not litter waste, plastic bags, plastic bottles in drains. One may also cover their assets against natural disasters. Keep an eye on weather updates - especially during the rainy season- from verified sources and if possible disseminate the same within your community.

One must obey orders by the authorities and shift to a safer place when asked to do so. If at home, switch off the electrical supply. Don't touch open wires. Simple measures such as installing the gas connection, water heater and electric panels high



above the ground can go a long way in reducing damage. Most importantly, don't get carried away by rumours.

Facing an urban flood can be both mentally and physically exhausting. Post-urban flood care is as necessary as pre-urban flood preparation. For this purpose and to prevent oneself from getting ill, sprinkle insecticides in the water ponds/stagnant water to prevent breeding of mosquitoes, drinking

chlorinated or boiled water is important along with eating clean and safe food.

While there are still challenges pertaining to mitigation of urban floods; technological advancement, infrastructural improvements along with the combined and consistent effort by urban local bodies, communities and individuals can help in successfully overcoming the threat of urban floods.

Do's and don'ts of Urban Floods

BEFORE FLOODS

- Ignore rumours; Stay calm; Don't panic.
- Keep your mobile phones charged for emergency communication; use SMS.
- Listen to radio, watch TV, read newspapers for weather updates.
- Untie cattle/animals to ensure their safety.
- Prepare an emergency kit with essential items for safety and survival.
- Keep a first aid kit with extra medication for snake bite and diarrhoea ready.
- Keep your documents and valuables in water -proof bags.

DURING FLOODS

- Don't drive through flooded areas.
- Don't enter flood waters. In case you need to, wear suitable footwear.
- Stay away from sewerage lines, gutters, drains, culverts, etc.
- Stay away from electric poles and fallen power lines to avoid electrocution.
- Eat freshly cooked or dry food. Keep your food covered.
- Drink boiled/chlorinated water.
- Use disinfectants to keep your surroundings clean.

IF YOU NEED TO EVACUATE

- Place furniture, appliances on beds and tables.
- Put sandbags in the toilet bowl and cover all drain holes to prevent sewage back flow.
- Turn off power and gas connection.
- Take the emergency kit, first aid box and valuables with you.
- Do not enter deep, unknown waters; use a stick to check water depth.
- Come back home only when officials ask you to do so.
- Wear face mask/cover, keep a sanitiser, maintain social distance during evacuation & in safe shelters.

AFTER FLOODS

- Do not allow children to play in or near flood waters.
- Don't use any damaged electrical goods; get them checked.
- Watch out for broken electric poles and wires, sharp objects and debris.
- Do not eat food that has been in flood waters.
- Use mosquito nets to prevent malaria.
- Don't use toilet or tap water if water lines/sewage are damaged.



G.V.V. Sarma

(Member Secretary, National Disaster Management Authority)

on Urban Floods

With floods in cities increasingly becoming a menace globally, Aapda Samvaad spoke with Shri G.V.V. Sarma, Member Secretary, NDMA to better understand the nuances of urban flooding and how NDMA is working towards mitigating the same.

Is it possible to foresee an urban flood, if yes, what is the methodology behind it?

Ans: Use of an efficient early warning system in urban areas is very much possible. The components in this regard are local networks for real time rainfall data, Doppler Weather Radars being deployed by India Meteorological Department, Data sharing by all concerned agencies, decision support systems at the level of the urban local body with appropriate resolution. NDMA has been supporting Assam State Disaster Management Authority with technical partnership of The Energy Research Institute (TERI) to develop a decision support system for Guwahati Municipal Corporation. National and State Disaster Mitigation Funds will provide financial mechanisms to support good field initiatives.

What are the major lessons learnt from recent instances of urban floods?

Ans: The first and foremost is the need to take up earnest measures to prevent clogging of drainage channels, whether it is done through irregular construction or encroachment or by any other means. Solid waste management is crucial. The importance of protection of lakes and water-bodies cannot be overemphasized. While all the law enforcement agencies need to be re-trained and re-oriented towards strict application of the techno-legal regime, it is necessary that the urban local body is equipped with the necessary decision support system, including deployment of pump-sets of required capacities in sufficient numbers at the locations identified well in advance. Identification of flood

shelters need to be planned for carrying out evacuation measures if needed, Timely dissemination of alert messages and communication of do's and don'ts to the members of the public are very important. It is also seen that conduct of mock exercises involving all disaster response agencies and communities would be of great help.

What is the main challenge of urban floods and how is NDMA overcoming them?

Ans: Mainstreaming disaster risk reduction into development is the main challenge of all Ministries of Government of India and of the State Governments. Towards this direction, NDMA has been supporting the concerned Ministries to have a holistic disaster management plan. The National Disaster Management Plan, 2019 brought out by NDMA provides the necessary framework based on which the Ministries and State Governments can prepare their Disaster Management Plans. Coordination with scientific early warning organisations and State Disaster Management Authorities/ State Disaster Management Departments is one important area in which NDMA has been involved.

What are the major infrastructural improvements that should be brought about in urban planning at various levels to reduce urban flooding risk?

Ans: Hazard risk and vulnerability assessment, specific measures to reduce vulnerability, spatial decision support systems, ward level flood risk reduction are some of the key areas that need to be taken care in urban planning, alongwith necessary enforcement measures including land use regulations.

In your opinion, what are the emerging technological trends in the mitigation and prevention process of urban floods?

Ans: Proper design and efficient management of urban drainage systems is the most important component of the overall framework of mitigation. Inventory of storm water drainage systems on the

GIS platform will help the Urban Local Body to take up timely measures. Early warning alert dissemination is also extremely important.

Do you think urban floods as a threat can be completely eliminated, if yes, then how?

Ans: A number of concerted measures, including proper management of solid waste, upkeep of drainage channels, pre-monsoon desilting of all drains, rigorous enforcement of land use and building regulations, rain water harvesting, incorporation of vulnerability and risk assessment maps into urban planning, will help in meeting the challenge of urban floods.

What can individuals and local communities do to reduce the impact of urban floods?

Ans: Community level participation can help in better planning well before the flood season, with a range of activities including proper identification of hotspots, taking adequate care of vulnerable population, helping in timely dissemination of alert messages, voluntary cooperation in remaining safe and indoors during the floods and playing most important role as community first responders. While expert forces such as the National Disaster Response Force, State Disaster Response Forces and Fire and Emergency Services play their valuable role during response; the community first responders can provide great support in saving lives and reducing property losses during the crucial time before the arrival of specialized agencies.



From Volunteers to Warriors

COVID-19 related initiatives by Aapda Mitra Volunteers

NDMA, through its Aapda Mitra project, trains community volunteers to deal with rescue and rehabilitation during a disaster. As the nation began reeling under the threat of COVID-19, Aapda Mitra volunteers displayed exemplary humanitarian and preventive actions such as community surveillance to enforce lockdown, home delivery of essential items, logistic support in running and monitoring quarantine & isolation centers, information dissemination and sanitation drives at public places in various districts to combat the spread of the disease.

Large scale sanitation drives were undertaken in Kottayam, Kerala.



In Kolhapur, Maharashtra, Aapda Mitra volunteers ensured that people get ration, fresh vegetables and food.

Aapda Mitra volunteers in Jagatsinghpur, Odisha conducted an awareness drive to educate rural communities on COVID-19.



In Sepahijala, Tripura, Aapda Mitra volunteers ensured people wear masks and distributed essential items to the community and to migrant labourers.



In Purba Medinipur and South 24 Parganas, West Bengal, Aapda Mitra volunteers distributed ration and monitored temperature of residents.



In Supaul, Bihar, Aapda Mitra volunteers distributed fresh food and ration to community members.



In Assam, Aapda Mitra volunteers conducted an awareness drive to educate rural communities on COVID-19



Aapda Mitra volunteers sensitised the communities of Gorakhpur, Uttar Pradesh on prevention of COVID-19.





The Corona Commandos!

Police - The Unsung Corona Warriors

- **P.N. Rai,**
Member, Bihar State Disaster Management Authority

Among all the Corona Warriors, the most visible yet the most underappreciated has been the humble policeman. Despite limited resources and grave risk to life, India's police agencies have risen to the challenge. Without them, achieving the primary objective of the lockdown – restricting the outbreak – would have been impossible.

As the lockdown began on the midnight of March 24, people sheltered at home, commercial activities came to a halt and transport was grounded, traditional police functions were replaced by new ones. In place of the routine duties of law-and-order maintenance, crime control, and traffic management, police were tasked to ensure that the lockdown was effective. As the situation evolved, many new responsibilities were added. As the pandemic is expected to continue for a few months more, newer dimensions of policing will emerge.

The National Policy on Disaster Management (NPDM) 2009 clearly describes police as the 'first and key responders' in a disaster. Incidentally, a pandemic was not 'a notified disaster' before COVID-19. When the lockdown – among the most stringent measures taken in the world, affecting 1.3 billion people – began, police had neither any Standard Operating Procedure (SOP) nor any guidelines as they had never faced a situation even remotely similar.

That, however, did not deter brave policemen and policewomen from risking their lives to ensure safety for the rest. They have manned barricade points through day and night to prevent unauthorised movement, advised those violating movement restrictions and drawn 'lakshman rekhas' in marketplaces. The pandemic has revealed the human face of the police personnel, who have gone beyond the call of duty; down to supplying vegetables and



groceries to people in containment zones and arranging food and transport for migrant labour on the move. They have protected healthcare workers and ensured the seamless movement of transport and logistics for essential commodities. Police stations and checkpoints have become sites of India's public health campaign. Posters and banners, street plays have been used to communicate the importance of social distancing and hand-washing – officers have even demonstrated proper hand-washing techniques at traffic stops. These duties will continue for a while and will get even more challenging as the country has started moving again with Unlock.

More importantly, they have been working under life-threatening conditions, since many of them do not have access to Personal Protection Equipment (PPE). Every single day, each one of them is bound to face the fear of catching infection, of taking it home and putting their family at risk. The fear is not unfounded either, as hundreds have been infected and many of them have died too. In Maharashtra, 1,273 police personnel from the 2-lakh-strong force had tested positive by the end of May, and 11 of them have lost their lives. More than 400 policemen have fallen ill in Delhi. When many of them had to be quarantined, the available strength of the force was depleted, forcing the department to draw personnel from non-combat units or wherever available. Manpower shortage became acute as the tasks expanded, especially in states like Bihar.

As days went by, the number of those arriving in states from outside and then quarantined rose to staggering heights, creating a nightmare for any

administration. Police escorted migrant labourers from railway stations in cities to quarantine centres near their homes. The magnitude of the task can be gauged by numbers. In Bihar, for example, there were 12,909 quarantine centres in which 22 lakh people had registered and over 6 lakh had taken shelter as on May 28.

On top of all challenges, police faced attacks from angry people or mobs for acting against lockdown violations and taking suspected patients to testing centres. As the administration too was severely strained, there was often no clarity on matters like the movement pass, which led to their conflict with people.

The examples of social service are not meant to celebrate the police, but to bring to light a core aspect of their work. Juxtaposing the two functions – law and order maintenance and social service – broadens our understanding of police behaviour and performance, especially when it comes to exceptional situations. Thus, India's response to COVID-19 has highlighted the other police function – social service – apart from the maintenance of public order. This is indeed in tune with the advice of the second report of the National Police Commission of 1980 that 'the police should duly recognise, and be trained and equipped to perform the service-oriented role in providing relief to people in distress situations.'

Going forward, there have been several valuable lessons from the pandemic. Above all, the police force needs to better appreciate its role as the first responder in emergencies and consciously adopt





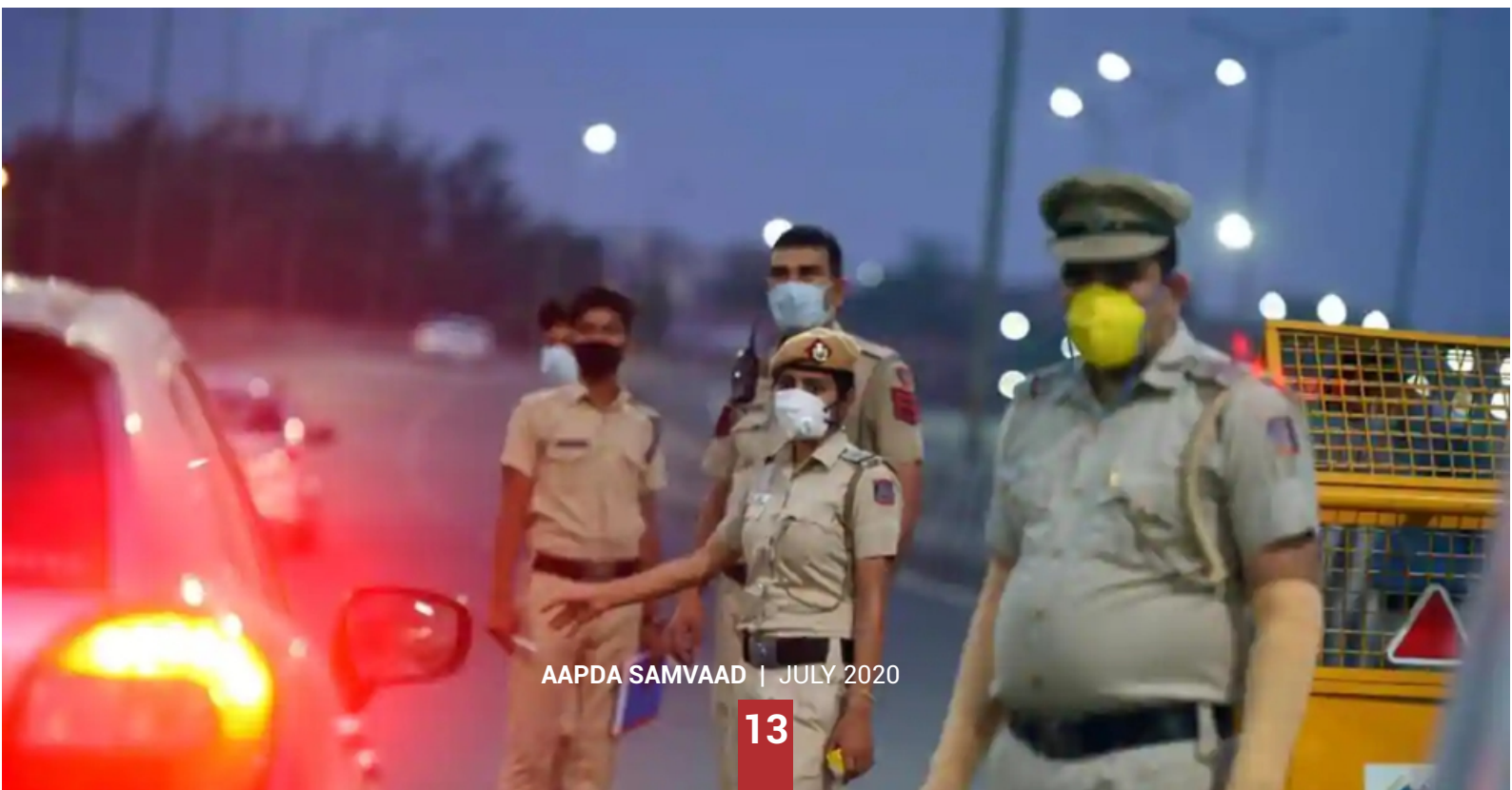
disaster management (including disaster risk reduction activities) as one of its primary functions. Police reform committees too have spoken about it. The role of the National Disaster Response Force (NDRF) and State Disaster Response Force (SDRF) in some states is essential, but they have their limitations and therefore building ground-level capacity of police and sister agencies like fire is critical to their function as the first responder.

The force also needs to build frontline capacity for crisis resilience. Police training focuses disproportionately on public order with heavy emphasis on 'hard' skills – weapon use, crime control, combat skills, crowd control drills. Policing during the COVID-19 pandemic has underscored the need for soft skills – for example, dealing with people through effective communication and

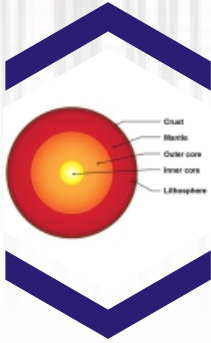
coordination. Police training should include a component in medical emergencies. Police need to prepare SOPs for public-health crises.

Last but not the least among the lessons, is community policing. In villages with large-scale return of migrants, the police force got stretched to the maximum, and villagers took upon themselves the role of policing – and they did well as they saw themselves as part of the solution. This model should be promoted for normal times too. Police do use community policing practices in mitigating communal tensions, left-wing extremism and urban policing; but these are often localised ad-hoc initiatives. It's time to integrate community policing into the police organisational ethos. Training academies should devote more time to this subject.

In fact, community policing will be much needed in the coming months, when conflicts at family or village level and petty crimes are likely to come up as social aftershocks of COVID-19. Migrant labourers have returned to their homes in villages in great numbers, and many of them are not likely to return to their work soon. Their prolonged unemployment can lead to situations in which police will have to intervene. Involving an alert community in the task will help the force.



THE FIVE FAQs- EARTHQUAKE

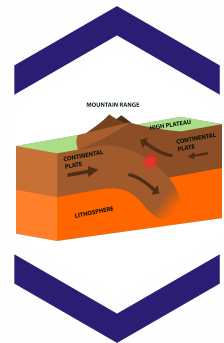


What is an Earthquake?

Ans. The sudden tremors or shaking or vibration of the earth's surface is called an Earthquake. The place where movement starts is called focus. The place on the surface above the focus is called the epicentre. "Seismograph" is a machine through which an earthquake is measured. "Seismology" is the special branch that deals with the study of earthquakes. The magnitude of the earthquake is measured on the Richter scale.

What factors cause Earthquake?

- Ans. A) Disturbance in the earth's crust (uppermost layer of the earth) or movement of earth's plates shows up as an earthquake on the surface of the earth.
 B) Volcano Eruption, hitting of meteor on the earth, or an Underground Explosion can also cause tremors.
 C) To some extent we as human beings ourselves are also responsible for these ecological imbalances such as unplanned and unorganized infrastructure.



What are the impacts of Earthquake?

Ans. **On Ground level:** Loss of human lives, Loss of Livelihoods etc.
On Manmade Structure: Structural Collapse damage to buildings, bridges, roads and Falling Objects such as trees, electric poles, billboards etc.
On Water Level: Can cause Flood, Tsunami, Landslides etc.

What precautions can people take during an Earthquake?

- Ans. A) Stay Calm! Do not panic.
 B) Take shelter under a table. Keep distance from buildings, trees, electric poles etc.
 C) Don't use lift. Use stairs.
 D) Stay away from heavy objects that may fall on you.
 E) If you are in a car or a bus, do not come out.



What precautions can people make in advance to tackle an Earthquake?

Ans. Although, Earthquakes cannot be predicted but the impact can certainly be minimized if we prepare beforehand. By following structural design while constructing a house or building can help us to some extent. We can also prepare basic emergency kit with essential items such as important documents, ID cards, first aid box, whistle etc. We can spread awareness amongst our family and friends and face any disaster confidently because precaution is better than cure.



“ The country cannot forget the services rendered by the unsung heroes who have done excellent work in the field of Disaster Management. ”

-Narendra Modi, Prime Minister

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