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PREPAREDNESS FOR DIFFERENT NATURAL
DISASTER IN CHANDIGARH



Disasters and types of disasters

According to United Nations Office for Disaster Risk Reduction "A disaster is a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts which exceeds the ability of the affected community or society to cope using its own resources". Disasters can result from either naturally occurring occurrences, such as earthquakes, hurricanes, flooding, or tornadoes, or from anthropogenic occurrences, which can be either unintentional (such as an unintentional hazardous leak or nuclear power plant events eg. Chernobyl, nuclear accident that occurred on 26 April 1986) or intentional (such as various terrorist attacks eg. Mumbai Terror attack on 26/11).

Disaster Management

Disaster management is the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, including planning, response, and recovery, to lessen the impact of disasters. It means that all precautions should be taken so that a hazard does not become a disaster. Natural disasters cannot be prevented from occurring, but their destructive impacts may be limited through appropriate management, reducing the loss of life and property.

Disaster Management Cycle

The disaster management cycle is a series of measures that organisations and individuals take to prepare for, contain, and mitigate unforeseen disasters.



National Disaster Management Authority (NDMA)

It is India's apex disaster management organization, headed by the Prime Minister. The Government of India established it on December 23, 2005, under the Disaster Management Act. The vision of NDMA is "To build a safer and disaster resilient India by a holistic, pro-active, technology driven and sustainable development strategy that involves all stakeholders and fosters a culture of prevention, preparedness and mitigation." State Disaster Management Authorities (SDMAs) are led by respective Chief Ministers in each state to develop and implement a comprehensive and integrated strategy for disaster management in India.

Functions and Responsibilities

The NDMA, as the primary authority, mandated with developing policies, plans, and guidelines for disaster management in order to ensure a fast and effective response to disasters. According to the mandate of NDMA it is responsible for the following tasks in this regard: -

- ♦ Formulate policies on disaster management.
- ♦ Approve the National Plan.
- ♦ Approve plans prepared by the Ministries or Departments of the Government of India in accordance with the National Plan.
- ♦ Lay down guidelines to be followed by the State Authorities in drawing up the State Plan.
- ♦ Lay down guidelines to be followed by the different Ministries or Departments of the Government of India for the Purpose of integrating the measures for prevention of disaster or the mitigation of its effects in their development plans and projects.
- ♦ Coordinate the enforcement and implementation of the policy and plans for disaster management.
- ♦ Recommend provision of funds for the purpose of mitigation.
- ♦ Provide such support to other countries affected by major disasters as may be determined by the Central Government.
- ♦ Take such other measures for the prevention of disaster, or the mitigation, or preparedness and capacity building for dealing with threatening disaster situations or disasters as it may consider necessary.
- ♦ Lay down broad policies and guidelines for the functioning of the National Institute of Disaster Management.



State Disaster Management Authority Chandigarh



State disaster management authority Chandigarh consists of the Administrator of the U.T. as its chairperson, followed by eight other people as members of the authority. While the District disaster management authority is chaired by the Deputy Commissioner as chairperson and other seven members as members of the authority in Chandigarh. The SDMA Chandigarh has prepared a guideline on the minimum standard of relief to provide efficient and effective relief during any emergency situation. A detailed disaster management plan titled "Multihazard draft disaster management plan, U.T. Chandigarh" has been prepared by SDMA to cope with the possible hazards in the Union Territory (Source: <https://chandigarh.gov.in/departments/other-departments/sdmz/>).

Causalities due to natural disasters in Chandigarh

According to the data given in the statistical abstract from the years 2015 to 2020, there have been total losses of 58 human lives from different natural incidents in Chandigarh. Majorly, lightning events, cold exposure, and other natural causes contribute to these losses in the U.T (Table 1).

Table 1: Causalities in Chandigarh due to natural disasters (2015-2020)

S.No.	Natural cause	2015	2016	2017	2018	2019	2020
1	Lightning	-	-	-	2	2	-
2	Heat Stroke	-	-	-	-	-	-
3	Flood	-	-	-	-	-	1
4	Cold & Exposure	-	4	1	1	-	-
5	Starvation/Thirst	-	-	-	-	-	-
6	Earthquake/Landslide	-	-	-	-	-	-
7	Epidemic	-	-	-	-	-	-
8	Torrential Rains	-	-	-	-	-	-
9	Other Natural Causes	-	-	-	45	-	2
10	Total	-	4	1	48	2	3

Source: Statistical Abstract Chandigarh 2018, 2019-2020, 2021

Disaster preparedness for various possible natural disasters in Chandigarh based on the guidelines of NDMA

COLD WAVE

According to the definition given by IMD "Cold wave is a condition of air temperature which becomes fatal to human body when exposed". It is based on the temperature thresholds over a region in terms of actual temperature or its departure from normal.

Dos and don'ts for the cold wave

- ♦ Have adequate winter clothing
- ♦ Stay indoors as much as possible
- ♦ Prefer mittens over gloves; mittens provide more warmth and insulation from cold
- ♦ Listen to radio, watch TV, read newspapers for weather updates
- ♦ Drink hot drinks regularly
- ♦ Take care of elderly people and children
- ♦ Store adequate water as pipes may freeze
- ♦ Have emergency supplies ready
- ♦ Check on any neighbours who live alone, especially the elderly
- ♦ Use only one room an internal room or passage will be easier to heat
- ♦ If freezing of pipes is likely, drain water from the system and keep it as an emergency supply; turn off the water main and turn taps on to empty pipes.
- ♦ If electricity fails freezers will preserve food for up to 48 hours if the door is kept shut
- ♦ Ensure that adequate clothing is worn many light layers are better than one thick layer
- ♦ Hats help to prevent heat loss
- ♦ Do not drink alcohol-it will reduce your body temperature





Cold Wave Safety Measures

FIRE

Unintentional fire that spreads over an area, posing a threat to life and property.

Dos and don'ts for the Fire Incidents

- ◆ Keep fire extinguisher at strategic points, and ensure its functionality; it is important that everyone knows how to use them.
- ◆ Always keep matches and lighters locked away from children
- ◆ Do not run electric wire/cord under carpets or in areas of heavy foot traffic
- ◆ Smoke alarms should be located on every level of a building. They should be positioned outside bedrooms, & at the top and bottom of the stairs.
- ◆ Test the alarms at least once every month
- ◆ Replace batteries regularly—testing will show if it is necessary to replace them more than annually
- ◆ Try to ensure that there are at least two escape routes from every room
- ◆ Note possible escape aids, such as trees, balconies or adjoining roofs.
- ◆ Ensure that your windows will open—test regularly and check for ease of opening (from the inside)
- ◆ Consider having escape ladders, collapsible or rope ones, if your residence consists of more than one level
- ◆ Ensure that all heating appliances are maintained regularly by qualified personnel
- ◆ Do not accumulate old newspapers or combustible materials. Do not store flammable liquids in the house. Do not smoke or have naked flame near combustible material.
- ◆ If your clothing catches fire do not run rushing air will only accelerate the burning
- ◆ Drop to the ground and roll to extinguish flames
- ◆ A shower will douse the fire quickly
- ◆ Do not go back for your possessions
- ◆ Before opening a door check it for heat use the back of your hand to test the temperature at the top of door, the knob and the frame before opening. If hot, do not open. Do not use the palms or fingers because, if the door is hot, you will suffer burns
- ◆ Use window in case escape is not possible from a door
- ◆ If it is being too high to jump from window, tie sheets together to form a ladder
- ◆ If trapped by fire, stay close to the floor—heat and smoke rises
- ◆ Once clear of the fire, call emergency services.





Fire Safety Measures

LIGHTNING

Lightning is a high-energy luminous electrical discharge accompanied by thunder. It is of three types: 1) Thundercloud or Intra-cloud lightning (IC) 2) Cloud-to-cloud or Inter-cloud lightning (CC) 3) Cloud-to-ground lightning (CG) The third type of lightning takes a toll on lives and property, and therefore, is of more concern.

Dos and don'ts for the Lightning events

- ♦ If at Home or work look for darkening skies and increased wind
- ♦ If you hear thunder then you are close enough to be struck by lightning
- ♦ Keep on monitoring local media for updates and warnings
- ♦ Stay indoors and avoid travel if possible
- ♦ Ensure that children and animals are inside
- ♦ Unplug unnecessary electrical appliances (to isolate them from the main power supply which may conduct a power surge during a lightning storm) Remove rotten tea timber or any other debris that may cause a hazard
- ♦ Avoid taking a bath or shower or running water for any purpose. This is because lightning can travel along pipes
- ♦ Keep away from doors, windows, fire places, stoves, bath-tubs, or any other electrical charge conductors
- ♦ Avoid using corded phones and other electrical equipment (mobile or cordless phones are safe)
- ♦ Go to safe shelter immediately-avoid metal structures and or constructions with metal sheeting
- ♦ Couch down with feet together and head down to make yourself a smaller target
- ♦ Ideally find shelter in a low-lying area and make sure that the spot chosen is not likely to flood
- ♦ Hairs standing up on the back of your neck could indicate that a lightning is imminent
- ♦ Do not lie flat on the ground; this will make a bigger target
- ♦ Keep away from all utility lines (phone, power, etc., metal fences, trees, and hill tops).
- ♦ Do not shelter under trees as these conduct electricity





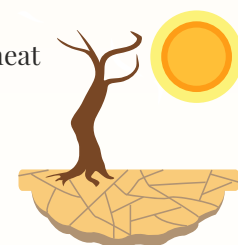
Lightning Safety Measures

HEAT WAVE

A Heat Wave is a period of abnormally high temperatures, more than the normal maximum temperature that occurs during the summer season in the North-Western parts of India. Heat Waves typically occur between March and June, and in some rare cases even extend till July. The extreme temperatures and resultant atmospheric conditions adversely affect people living in these regions as they cause physiological stress, sometimes resulting in death.

Dos and don'ts for the Heat wave

- ♦ Listen to radio; watch TV; read newspaper for local weather news
- ♦ Use ORS (Oral Rehydration Solution), homemade drinks like lassi, torani (rice water), lemon water, buttermilk, etc. to keep yourself hydrated
- ♦ Wear lightweight, light-coloured, loose, cotton clothes
- ♦ Cover your Head: use a cloth, hat or umbrella
- ♦ Caution workers to avoid direct sunlight
- ♦ Avoid going out in the sun, especially between 12.00 noon and 3.00pm
- ♦ Do not go out barefoot
- ♦ Avoid strenuous activities when outside in the afternoon
- ♦ Avoid cooking during peak hours. Open doors and windows to ventilate cooking area adequately
- ♦ Avoid alcohol, tea, coffee and carbonated soft drinks, which dehydrates the body. Avoid high-protein food and do not eat stale food
- ♦ Do not leave children or pets in parked vehicles-as they may get affected by Heat Wave
- ♦ Keep your home cool, use curtains, shutters or sunshade and open windows at night. Try to remain on lower floors.
- ♦ Keep your home cool, use curtains, shutters or sunshade and open windows at night.
- ♦ Create a breeze inside your home by strategically opening your windows at opposite ends to enable cross ventilation.
- ♦ In much the same way the ice /snow reflects UV rays instead of absorbing the heat like the oceans do, white roofs/terraces reflect the heat and help keep the house cool.
- ♦ Know the elderly, young, sick or overweight as they are more likely to become victims of excessive heat and may need help





HEATWAVE - DOs AND DONTs
Stay indoors as much as possible



HEATWAVE - DOs AND DONTs
Wear lightweight, light-coloured, loose, cotton clothes



HEATWAVE : DO's AND DON'Ts

Use ORS (Oral Rehydration Solution), homemade drinks like lassi, torani (rice water), lemon water, buttermilk, etc. to keep yourself hydrated



Heat Wave Safety Measures

EARTHQUAKE

An earthquake is a phenomenon that occurs without warning and involves violent shaking of the ground and everything over it. It results from the release of accumulated stress of the moving lithospheric or crustal plates. The earth's crust is divided into seven major plates, that are about 50 miles thick, which move slowly and continuously over the earth's interior and several minor plates. Earthquakes are tectonic in origin; that is the moving plates are responsible for the occurrence of violent shakes. The occurrence of an earthquake in a populated area may cause numerous casualties and injuries as well as extensive damage to property.

Dos and don'ts for the Earthquake

- ◆ Know emergency telephone numbers (such as those of doctors, hospitals, the police, etc)™
- ◆ Follow BIS codes relevant to your area for building standards
- ◆ Repair defective electrical wiring and leaky gas connections. These are potential fire risks.
- ◆ Repair deep plaster cracks. Get expert advice if needed.
- ◆ Fasten shelves securely to walls
- ◆ Place large or heavy objects on lower shelves.
- ◆ Store breakable items in low, closed cabinets with latches
- ◆ Hang heavy items away from places where people sit/sleep
- ◆ Repair defective electrical wiring and leaky gas connections.
- ◆ Keep an emergency kit ready
- ◆ Develop an emergency communication plan
- ◆ In case of separation, develop a plan beforehand for reuniting after the disaster
- ◆ Have an emergency home/office site evacuation plan ready.
- ◆ Ask an out of state relative or friend to serve as the 'family contact' after the disaster. Make sure everyone in the family knows their name, address, and phone number.
- ◆ During earthquake if present inside a moving vehicle, then proceed cautiously once the earthquake has stopped. Avoid roads, bridges, or ramps that might have been damaged by the earthquake.
- ◆ Stop as quickly as safety permits and stay in the vehicle. Avoid stopping near or under buildings, trees, overpasses and utility wires.
- ◆ If in open space, stay there until the shaking stops. However, move away from buildings, exits, exterior walls and heavy objects
- ◆ During earthquake if present inside building drop to the ground; take cover by getting under a sturdy table . stay away from glass, windows, outside doors and walls, and anything that could fall (such as lightning fixtures or furniture)™





- ♦ After earthquake avoid entering damaged building. Use stairs instead of elevators.
- ♦ Do not light matchstick or gas. Call out for medical help in case you see any injured person
- ♦ Only consider information from the authorities
- ♦ If trapped under debris do not move about or kick up dust. Cover your mouth with a handkerchief or clothing
- ♦ If trapped under debris tap on a pipe or wall so rescuers can locate you. Use a whistle if one is available. Shout only as a last resort



Initiatives undertaken by the Chandigarh Administration regarding Disaster management

According to the information provided by the Disaster Management Cell, Chandigarh Administration an amount of Rs 77.00 lac was allocated by the National Disaster Management Authority (NDMA) in the year 2017-18 under the National School Safety Programme (NSSP) which covered each and every school of U.T., Chandigarh. In the said programme, 7025 numbers of teachers were trained on Disaster Preparedness and School Safety Awareness.

Apart from preparing the disaster management plan for Chandigarh, the department routinely organises mock drills and awareness programmes for disaster preparedness to various stakeholders for improved disaster management planning and reducing the damage it causes. Table 2 lists the mock drills that were organised during the period 2019-2021.



Awareness and mock drills conducted for disaster preparedness in Chandigarh



Awareness and mock drills conducted for disaster preparedness in Chandigarh

Table 2: List of mock drills conducted for disaster preparedness in Chandigarh during 2019-2022

Sr No.	Date	Place	Mock Drill	Incidence/Spot
1.	22 January 2019	Bus Stand Sec-43	Mock Drill	—
2.	22 January 2019	Bus Stand Sec-17	Mock Drill	—
3.	23 January 2019	Prade Ground Sec-17	Mock Drill	—
4.	25 January 2019	Prade Ground Sec-17	Mock Drill	—
5.	25 February 2019	High Court Chandigarh	Mock Drill	—
6.	26 February 2019	Punjab University Sec-17	Mock Drill	—
7.	26 February 2019	Elante Mall	Mock Drill	—
8.	30 March 2019	I.T.Park Deluxe Building	Mock Drill	—
9.	06 April 2019	Neelam Theatre Sec-17	Mock Drill	—
10.	13 April 2019	Ram Darbar	Mock Drill	—
11.	31 July 2019	Hotel Shivalika View	Mock Drill	—
12.	01 August 2019	ISBT Sec-17 Chandigarh	Mock Drill	—

13.	05 August 2019	CSIO Sec-30 Chandigarh	Mock Drill	–
14.	06 August 2019	Treasury Office Sec-17	Mock Drill	–
15.	08 August 2019	Chandigarh Club Sec-1	Mock Drill	–
16.	12 August 2019	Elante Mall	Mock Drill	–
17.	13 August 2019	Gate No.08 Prade Ground Sec-17	Mock Drill	–
18.	24 November 2019	Sec-11 Girl College Chandigarh	Mock Drill	–
19.	30 November 2019	Punjab Civil Sec,	Mock Drill	–
20.	05 December 2019	Near Kali Badi	Mock Drill	–
21.	14 January 2020	Hotel Shivalik View	Mock Drill	–
22.	15 January 2020	Treasury Branch Sec-17 Chandigarh	Mock Drill	–
23.	21 January 2020	Old District Court Chandigarh	Mock Drill	–
24.	24 January 2020	Sec-17 Prade Ground Gate No,08	Mock Drill	–
25.	25 February 2020	RBI Bank Sec-17	Mock Drill	–
26.	07 August 2020	Treasury Sec-17 Chandigarh	Mock Drill	–
27.	09 August 2020	DRDO Plot No,08 Sec-37-A,Chandigarh	Mock Drill	–
28.	11 August 2020	Phase-1 BBMB IND,Area Chandigarh	Mock Drill	–
30.	11 August 2020	UT Academy Sec-43	Mock Drill	–
31.	07 January 2021	Club Sec-9-C,	Mock Drill	–
32.	11 January 2021	ISBT Sec-17	Mock Drill	–
33.	12 January 2021	Canadian Embassy Elante Mall	Mock Drill	–
34.	16 January 2021	Sec-39 Near Water Works Chandigarh	Mock Drill	–
35.	19 January 2021	District Court Near ISBT Sec-17	Mock Drill	–

36	20 January 2021	Hotel Shivalik View	Mock Drill	–
37.	22 January 2021	SLD Complex Near IND, Area Phase-1 Chandigarh	Mock Drill	–
38.	25 January 2021	Chandigarh, Police Head Quarter 3RD Floor	Mock Drill	–
39.	15 July 2021	BBMB Colony Sector 19 Chandigarh	Mock Drill	–
40.	16 July 2021	IND, Area Phase-1 BBMB Colony	Mock Drill	–
41.	20 July 2021	All India Radio Sec-34 Chandigarh	Mock Drill	–
42.	29 July 2021	Doordarshan Kendra Sec-37 Chandigarh	Mock Drill	–
43.	03 August 2021	Treasury Branch Sec-17	Mock Drill	–
44.	04 August 2021	Old District Court Sec-17	Mock Drill	–
45.	06 August 2021	Hotel Shivalik View Sec-17	Mock Drill	–
46.	26 October 2021	Elante Mall, Chandigarh	Mock Drill	–
47.	15 January 2020	Treasury Branch Sec-17 Chandigarh	Mock Drill	–
48.	26 October 2021	Union Bank Sector 40D, Chandigarh	Mock Drill	–
49.	28 October 2021	Groz Beckert. Pvt. Ltd Ind. Area PH-1 Chandigarh	Mock Drill	–
50.	16 January 2022	Income Tax Office Chandigarh	Mock Drill	–
51.	17 January 2022	Hotel Shivalik View Chandigarh	Mock Drill	–
52.	18 January 2022	Elante Mall Chandigarh	Mock Drill	–
53.	18 January 2022	Hayat Hotel Ind Area Chandigarh	Mock Drill	–
54.	19 January 2022	All India Radio Sec 34 Chandigarh	Mock Drill	–
55.	10 February 2022	Chief Minister Haryana Residence	Mock Drill	–
56.	03 March 2022	Airforce Station	Mock Drill	Anti Hijacking
57.	03 March 2022	Airforce Station	Mock Drill	Anti Hijacking

58.	29 March 2022	Rock Garden Gate -03	Mock Drill	Building Collapse
59.	19 April 2022	DLF Building IT Park	Mock Drill	Fire
60.	19 April 2022	RBI Building Sec-17 Chandigarh	Mock Drill	Fire
61.	18 May 2022	Hon'ble Chief Minister Haryana Residence	Mock Drill	Bomb
62.	21 May 2022	DLF Building IT Park	Mock Drill	–
63.	24 June 2022	Doordarshan Sec 37 Chandigarh	Mock Drill	Bomb
64.	05 July 2022	PB HR High Court Chandigarh	Mock Drill	Attack
65.	06 July 2022	PB & HR Sectr.	Mock Drill	Attack
66.	06 July 2022	Doordarshan Sec 37 Chandigarh	Mock Drill	Firing
67.	16 July 2022	Police HQ, Sec-9, 4th Floor Chandigarh	Mock Drill	–
68.	20 July 2022	BBMB Office Sec-19 Madhya Marg	Mock Drill	–
69.	27 July 2022	CSIO, Sec-30 Chandigarh	Mock Drill	–
70.	01 August 2022	Hotel Shivalik View Sec-17 C Chandigarh	Mock Drill	–
71.	08 August 2022	Elante Mall	Mock Drill	–
72.	08 August 2022	Elante Mall	Mock Drill	–

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