

Firecracker Blast

Prelims - Current events of national and international importance.

Mains (GS Paper III) - Conservation, environmental pollution and degradation, environmental impact assessment, and disaster management.

Why in news?

The recent firecracker factory blaze in Gujarat caused fatalities of 21 people including few children's.

What are the causes for recent fire blast incident?

- **Lack of safety mechanisms** - The factory had no fire safety equipment, no proper ventilation, and no first-aid equipment.
 - It violates norms under the Factories Act, 1948.
- **Negligent Monitoring** - Though local police had conducted a spot check at the factory just 15 days ago, they failed to indicate that crackers were being manufactured based the materials found.
- **Illegal manufacturing** - While the factory had license only for storage and trading, it had illegally operated to manufacture firecrackers.
- **Presence of Explosive Substances** - Aluminium powder and yellow dextrin, the chemicals used for making explosives were found which might have led to a massive uncontrolled blast.

Status of Fire Blast Related Fatalities in India

- According to the NCRB's "Accidental Deaths and Suicides in India 2022" report:
- **Events** - 60 incidents of fires at factories where combustible materials like crackers and matchboxes are made.
- **Fatalities** - It led to 66 deaths and 32 injured people.
- **Vulnerable states** - Tamil Nadu, Bihar, Jharkhand, Uttar Pradesh, and Rajasthan.
- **Issues** - Many cases involve migrant workers and child labour, but go unreported or untraced.

How India regulates fire blast events?

- **Explosives Act, 1884 & Explosive Substances Act, 1908** - They regulate the manufacture, possession, use, sale, transport, and import of explosives.
- **Factories Act, 1948** - It has provisions for health, safety, and welfare of workers in factories.
- **National Building Code (NBC) 2016**: It mandates fire safety norms, including proper ventilation, spacing, and storage standards for industrial units handling explosives.

- **NDMA Guidelines on Chemical and Industrial Disasters, 2007** - It emphasise risk assessment, licensing, regular audits, and disaster response planning for hazardous industries.
- **Child Labour (Prohibition and Regulation) Act, 1986** - It prohibits employment of children in hazardous industries like firecracker manufacturing.
- **Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979** - It protects migrant workers employed in a firecracker unit when they are injured or killed in an accident.
 - **Section 13 & 16:** The contractor is legally bound to provide medical aid and timely compensation.
- The principal employer also shares responsibility to ensure that insurance coverage and emergency assistance are in place.

FOR SAFETY SAKE

The following measures should be taken to avert fire accidents in firecracker manufacturing units and godowns:

GODOWNS	MANUFACTURING UNITS
<p>The stacking height for the storage of boxes containing fireworks should be within an accessible height for easy handling</p> <p>Tools made of ferrous materials like staples and hammer should not be used in godowns</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <ul style="list-style-type: none"> > Static current discharge plates should be installed in fireworks manufacturing units > Mixing quantity allowed per day should tally to the manufacturing capacity of the units; it will avoid storage of these hazardous mixtures beyond the day > Workers should sit only in designated places in the working shed, especially near doors to enable easy escape > Manufacturing activities should not be done under tree shades and on rainy days > Sieving/breaking of lumps of </div> <div style="width: 35%; text-align: center;">  </div> </div> <ul style="list-style-type: none"> raw materials/dusting of gunny bags inside the raw material store/mixing/filling rooms should be prohibited > Knives, tools, and use of ferrous materials in any form should be prohibited in fireworks industry > Number of persons in the working shed should be limited to approved numbers > Colour pellets should be manufactured in separate sheds with wall mounts

Workers should careful not to drop boxes during loading and unloading; trolley made of aluminum/brass fitted with rubber wheels can be used

What are the challenges in regulating it?

- **Fragmented oversight** - Licensing, safety, labour laws, and environment regulations are all handled by different departments, creating gaps in accountability.
- **Corruption and local nexus** - Units often operate with political patronage or by bribing local officials.

- Even when inspections happen, they are just a formality.
- **Poor Inter-State Coordination** - In this incident, migrants from Madhya Pradesh working in Gujarat had no records or benefits, exposing a failure in inter-state labour coordination.
- **Outdated laws** - Laws like the Explosives Act (1884) is over 140 years old and they don't reflect modern industrial risks.
- **Judicial delays** - Even when FIRs are filed, convictions are rare.
 - Victims' families wait years for justice or compensation.

What lies ahead?

- **Unifying licensing and monitoring** - A single-window system can be created for issuing and monitoring explosive-related licences with geo-tagging and digital audits.
- **Factory inspections** - Making labour and safety inspections mandatory even for small-scale or rural units.
- Surprise checks must be incentivised.
- **Faster penal action** - It can be ensured by fast-track cases under Bharatiya Nyaya Sanhita for culpable homicide.
- Officials who overlook violations should be penalised.
- **Support for migrant workers** - Implement portable social security, digital ID cards, and insurance for inter-state workers through e-Shram platform.
- **Child labour rehabilitation** - Enforcing and expanding skill-building & cash transfer schemes for rescued child workers.
- **Victim compensation & care** - A Firecracker Accident Victims Fund and fast-track disbursement through District Legal Services Authorities (DLSA) can be implemented.

Quick facts

Petroleum and Explosive Safety Organisation (PESO)

- PESO, formerly known as Department of Explosives, since its inception in 1898.
- It has been serving as a nodal agency for regulating safety of hazardous substances such as explosives, compressed gases and petroleum.
- **Headquarters** - Nagpur, Maharashtra.
- **Objective** - To provide operational and technical advice and assistance to central government, states, local bodies, law enforcement agencies, industry, trade and end users.
- **Role** - Its major work is to administer the responsibilities delegated under the Explosives Act 1884 and Petroleum Act 1934 with the motto "**Safety First**".

Reference

[The Hindu| Gujarat Firecracker Factory Blast](#)