DM.

Unit-1

Understanding disaster - concept of disaster - Different approaches - concepts of risk levels of disasters - Disaster phenomena and events

Hazards and vulnerabilities - Natural and man-made hazards, response time, frequency and forecasting levels of different hazards - Characteristics and damage potential of natural hazards; hazard assessment - Dimensions of vulnerability factors; vulnerability assessment - Vulnerability and disaster risk - Vulnerabilities to flood and earthquake hazard

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What is disaster?

A disaster is a very bad event that causes big damage, kills people or hurts the environment. It can stop normal life and make people suffer. Disaster can be natural like floods and earthquakes, or man made like big fires or accidents. For example, if a flood covers homes and roads and people have no food or shelter, it is a disaster.

How does a disaster happen?

A disaster happens when a dangerous event (like storm or fire) affects people are not ready. If houses are weak or people don't know what to do, the damage is worse. There are 3 main things that causes a disaster.

1. A hazard (like a storm or earthquake)
2. People and places that are not strong or safe; and

for eg. heavy rain is not a disaster by itself. But if it is raining too much in a city with bad drainage, the water may flood homes - that becomes a disaster

## What is hazard?

A hazard is smthng that might cause harm. It is a danger, but it doesn't always cause a disaster. Hazards can be from nature like earthquakes or volcanoes, or made by people like fire or pollution. for example, if living near a volcano is a hazard - it's risky. But it becomes a disaster only when the volcano erupts and hurts people or places.

## Difference between hazard and disaster:

A hazard is a possible danger, but a disaster is what happens when the danger actually causes damage. Hazards do not always lead to disasters. for example, an earthquake is a hazard. If it happens in a place with strong buildings, it may not cause much harm. But if it happens in a place with weak houses, it can become a disaster. So, a disaster is the result of a hazard that causes real damage

## concept of Disaster

The concept of disaster means understanding what a disaster is, how and why it happens, and what effects it has on people and the environment. It includes the idea that a disaster is not just a natural event, but the result of a hazard affecting people who are exposed and vulnerable. It also includes knowing the risk, being prepared, responding quickly, and recovering afterward. The concept helps us see that we can reduce the effects of disasters if we plan better, build stronger, and teach people what to do.

## How a disaster happens

A disaster happens when a dangerous event, like a food, earthquake or fire, affects people, buildings or the environment. These events are called hazards. If a hazard occurs in a place where people are living, working, or studying, and they are not prepared for it, then it can turn into a disaster. For example, heavy rain is just a hazard, but if it floods a city and people lose their homes or get hurt, it becomes a disaster.

## Why a disaster happens.

A disaster happens mainly because of 3 things, hazards, vulnerability and exposure. Hazards are dangerous

event like storms or earthquakes. Vulnerability mean weakness - like living in weak houses, having no emergency plans, or not knowing what to do during danger. Exposure means being in a risky place, like near a river or in an area where landslides happen. If all these things come together, a disaster is likely to happen

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## Different approaches

DM is the process of preparing for, responding to, and recovering from disasters to reduce harm to people and the environment. Since the disasters can't always be avoided, different approaches are used to reduce their impact and help people recover. Each approach focuses on a different stage of the disaster - before, during and after it happens. These approaches helps in saving lives, protecting property and rebuilding communities. The main approaches are prevention, mitigation, preparedness, Response and recovery

### 1. prevention approach

This approach focuses on stopping a disaster from happening. It includes taking steps that remove the risk or reduce the chances of danger. for eg, banning construction near rivers, not allowing illegal mining, or planting trees to prevent soil erosion.

prevention is a long-term method that keeps people and nature safe by stopping hazards from turning into disasters.

2. Mitigation approach

mitigation means reducing the damage that a disaster can cause, it doesn't stop disaster but helps to reduce it effects. This can be done by building strong structures, using flood barriers, or designing cities with proper drainage

3. preparedness approach

it is all about getting ready before a disaster strikes. It includes training people, making emergency plans, conducting mock drills, and creating awareness through education, early warning systems, storing relief materials, and having clear escape routes also help. preparedness ensures that people know what to do and can act quickly during an emergency.

4. Response approach

It is used during or just after the disaster. It involves rescue operations, medical help, and providing food, water and shelter to victims. The goal is to save as many lives as possible and reduce suffering

5. Recovery approach

as it takes place after the disaster has ended. It focuses on helping people return to normal life

This includes repairing damaged buildings, restoring services like electricity and water, and supporting people emotionally and financially. It may take a long time, but it helps rebuild the community in a stronger and safer way

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concept of Risk in disasters

Risk in disaster management means the chance or possibility that a disaster might happen and cause harm. It depends on three things: the hazard (the dangerous event, like an earthquake), the vulnerability (how weak or unprepared people or places are), and the exposure (how many people or things are in the danger zone). If all three are high, the risk is also high.

levels of disaster risk

1. low risk

- A low risk area is one where hazards are rare or weak. People are well prepared, and buildings are strong, for example, a city with good planning and early warning systems may face a storm but with little damage. People here are aware and ready

so the risk is small

2. medium risk:

In medium-risk areas, hazards may happen more often or be stronger, and some people may not be fully prepared. The area may have some weak buildings or poor planning. Damage may happen, but not always major

3. High risk

High risk areas face strong or frequent hazards, and people are not well prepared or live in weak houses. These areas may not have warning system or emergency plans. when a disaster happens here, the damage is usually very serious

4. Very high risk

These areas are in extreme danger, where strong hazards often hit and people are highly vulnerable. There may be no safety systems and poverty or lack of knowledge make it worse.

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Disaster phenomenon

A disaster phenomenon is a natural or human-made process or activity that can turn into a disaster when it affects people, property, or the environment. It includes events like earthquakes, floods, cyclones, droughts or chemical leaks. These phenomenon happen due to natural forces (like movements in the earth or changes in weather) or human action (like pollution, deforestation or poor construction)

Disaster Events

Disaster events are the actual happenings or incidents where a hazard has caused harm. These are real-life occurances where people, infrastructure, or the environment are affected.

1. 2004 Indian Ocean Tsunami

On dec 26, 2004, a huge undersea earthquake near Sumatra (Indonesia) caused a massive tsunami in Indian Ocean. The earthquake measured 9.1 on the richter scale. Huge waves hit the coasts of 14 countries including Indonesia, India, Srilanka and Thailand.

2. 2001 Gujarat Earthquake

On January 26, 2001, a powerful earthquake (7.7 magnitude) struck gujarat. Around 20,000 people died and many buildings collapsed. The city of Bhuj was heavily damaged. This disaster showed the need for stronger buildings and better emergency response in India.

3. 2004 India Ocean Tsunami

The Tsunami caused by an undersea earthquake hit India's eastern coast, especially Tamil Nadu and the Andaman & Nicobar Islands. Over 10,000 people died in India. Entire villages were washed away. This led to the setting up of a tsunami warning system in the world.

4. 2013 Uttarakhand floods

Heavy rainfall in June 2013 caused floods and landslide in Uttarakhand, especially near Kedarnath. Over 5,000 people died. Roads, houses and temples were destroyed. This disaster showed the dangers of building too much in fragile mountain area

5. 2018 Kerala floods

In August 2018, Kerala received heavy rainfall which caused rivers to overflow. over 400 people died and thousands lost their homes. It was one of the worst floods in 100 yrs in Kerala.

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## Hazards and Vulnerabilities

Hazards are natural or human-made events that have the potential to cause harm or damage. Hazards are things or events that can cause harm to people, animals homes, or the environment. They can happen naturally, like an earthquake shake the ground, a flood covering land with water, or a strong storm blowing away trees and buildings. Hazards can also be caused by people, like accidents in factories, fires that start in buildings or pollution spreading harmful chemicals. Knowing what hazards might happen helps prepare better, such as building safer houses or having plans to move to safe places when a storm comes

## Vulnerabilities

Vulnerability means how easy it is for people or places to get hurt when a hazard happens. Some people or areas are more vulnerable becoz they don't have strong homes, enough money, or good health care. People who are very poor or sick also have a harder time surviving disasters. Vulnerability can be becoz of many things - like lack of education about what to do in a disaster, or living in a dangerous place like near a river that floods often.

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## Natural and Man-Made hazards

Natural hazards are dangerous that come from nature. They include things like earthquakes, floods, cyclones, landslides, tsunamis, droughts and volcanic eruptions. These events are caused by natural forces such as weather, movement of the earth, or changes in the sea. These hazards are not caused by the people, but they can hurt people, animals, homes, and the environment. We cannot stop them, but we can prepare for them to reduce their impact.

### 1. Earthquake

An earthquake happens when the ground shakes suddenly becoz of movements inside the

earth. This shaking can break buildings, bridges and roads. People may get hurt, lose their homes, or even die. It can happen without warning and cause a lot of fear and damage.

2. Flood

A flood occurs when too much rain or river water covers the land. Water enters homes, roads and fields. People and animals may have to leave their homes. Floods can damage property and cause deaths. They also bring dirty water and diseases

3. Cyclone

A cyclone is a very strong storm that comes from the sea. It has fast winds and heavy rain. Cyclones can blow away roofs, break trees and cause power cuts. They often lead to floods afterward. Many people must leave their homes during cyclones.

4. Tsunami

A Tsunami is a large ocean wave caused by an underwater earthquake. These waves rush toward land with great force. When they hit, they flood and destroy everything near the coast. People living near the sea are in great danger. Tsunamis cause many death and damage.

5. Volcanic eruption

A volcanic eruption happens when hot lava, ash and gases come out from a volcano. The lava can burn

houses, trees and roads. The ash can pollute the air and harm breathing. people near the volcano must run to safer places. It can also change the land forever

6. Drought.

A drought is when there is no rain for a long time. The soil becomes dry and plants and crops die. people and animals face water and food shortages. lakes and rivers shrink, and the land cracks. Drought can last for months or even years

## Man-Made hazards

Man-made hazards are dangers that happen because of human actions. Examples include fires, chemical spills, industrial accidents, pollution, nuclear accidents, deforestation and even terrorist attacks. These hazards happen due to carelessness, mistakes or harmful activities by people. These hazards can often be prevented or controlled if proper safety rules are followed

1. Fire

fire can start due to electrical faults, accidents or carelessness. They burn homes, buildings, and forests, people and animals can get badly hurt or die. smoke from fire also causes breathing problems. fire spreads quickly if not controlled

2. Industrial accident

It happens in factories, like gas leaks, fires or explosions. These can hurt workers and nearby people. Toxic gases can make people sick or cause death.

3. Oil Spill

An oil spill happens when oil leaks into oceans and seas. It spread over the water and kills fish and sea animals. The water becomes dirty and unsafe. Cleaning oil from the sea is very hard and expensive.

4. Nuclear accident

A nuclear accident happens when radiation leaks from a power plant. Radiation is very harmful and can make people and animals sick. It also pollutes the air, land and water.

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Response time

Response time refers to the amount of time taken by emergency services or disaster response teams to act after a disaster has occured. It is a crucial factor in disaster management because the faster the response, the more lives and property can be saved. Response time begins the moment a disaster, such as an earthquake, flood or fire strikes, and continues until rescue teams, medical aid, or other support services reach the affected area.

A short response time means that help arrives quickly, which can reduce injuries, prevent death and control the damage. On the other hand, delays in response can worsen the situation as people may be left without medical attention, food, water, or shelter. Effective communication, good infrastructure and quick decision-making all help improve response time and ensure timely support to those in need.

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Frequency and forecasting levels of different hazards

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Characteristics and damage potential

1. Earthquake

It occurs when there is a sudden movement of rocks beneath the earth's surface. This releases a huge amount of energy that make the ground shake. Earthquakes can happen without warning and last from a few seconds to several minutes. The strength of the earthquake measured on the richter scale

Earthquakes have a very high damage potential. They can destroy buildings, bridges, roads and power lines

## Floods

flood happen when water covers land that is normally dry. This can be caused by heavy rainfall, overflowing rivers, melting snow, or broken dams. flooding can be slow or sudden, depending on the cause

The damage can be range from medium to high. floods ruin homes, shops, roads and farmland

## Cyclones

cyclones are huge storm systems that form over warm ocean water. They bring very strong winds, heavy rain and high ocean waves.

Cyclones have an extremely high damage potential. They uproot trees, break buildings, cut off electricity, and flood entire town

## Tsunamis

Tsunamis are large sea waves caused by underwater earthquakes or volcanic eruptions. They move fast and hit coastal areas with great force.

Tsunamis are highly destructive, especially in low-lying coastal areas. They can sweep away buildings, vehicles and trees.

Indestrial accidents

These include gas leaks, chemical spills, or explosions in factories or power plants. They are usually caused by technical failures, poor safety or human error.

They are very badly and damaging. Toxic gases or chemicals can kill people, harm the environment and cause long term health issues.

Pollution

The release of harmful substances into the environment. Like smoke, chemicals, plastic or dirty water. It can come from factories, vehicles or waste.

Pollution causes slow but serious damage to human health, animals and nature. It leads to diseases, reduces crop quality, and harms ecosystems. It also adds to climate change, which affects everyone badly.

# Hazard Assessment

hazard assessment is the process of identifying and understanding possible dangers that can cause harm to people property or the environment. It helps communities, government and planners to prepare, prevent or reduce the damage caused by disaster planning, building safer structure and protecting lives and resources.

The purpose of hazard assessment is to understand what kind of hazard exist in a region, how often they happen, how strong or severe they are, and what areas and people are most at risk. This helps in disaster planning, building safer structure and protecting lives and resources.

## Steps

a) hazard identification (identify what hazards are common in that area)

b) location mapping: create maps to show where these hazards usually occur)

c) frequency and magnitude analysis (understand how often the hazard happens and shows storms or severe it usually is)

Vulnerability assessment

Check which areas, people, building or infrastructure are mostly likely to be affected.

Risk estimation

Combine hazard, location, frequency and vulnerability to estimate the risk

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Dimension of vulnerability factor

This help in identifying who is most at risk, why they are at risk, and what steps can be to reduce damage and save lives during a disaster.

Physical vulnerability:

This includes the location, type of building, and access to basic facilities. people living in flood prone or earthquake zones or in poorly built homes are at greater risk. In DM, it is important to map risky areas build stronger infrastructure, and create safe shelter, improving building code and city planning helps reduce physical vulnerability

Social vulnerability

This focus on people's characteristics, such as age, gender, health, disability and education.

DM plans must ensure inclusive rescue, awareness programs, and health support for all social groups.

3. Economic Vulnerability

People with low income, unstable jobs or no savings suffer more during disasters. They often cannot afford safer homes or emergency kits. DM includes providing financial aid, insurance and rebuilding support.

4. Environmental Vulnerability

This refers to the condition of the natural surroundings like forests, rivers or drainage systems. Cutting trees, polluted rivers or poor land uses increases disaster risk. DM must promote eco-friendly practices. Environmental planning helps reduce the effects of floods, droughts and storms.

Unit 2

Concepts of risk management and crisis managements Disaster Management Cycle- Response and Recovery- Development, Prevention, Mitigation and Preparedness- Planning for Relief

**Disaster?**

**A disaster is a sudden event that causes a lot of damage or harm. It can hurt people, homes, and the environment. Some disasters happen naturally, like earthquakes, floods, hurricanes, or wildfires. Others happen because of humans, like accidents, pollution, or wars. When a disaster happens, it can be hard for people to live normal lives. The damage might be so big that local resources are not enough to fix it. That is when we call it a disaster. If people and communities are well prepared, the disaster may cause less harm. But if they are not ready, the effects can be worse. So, a disaster is more than just a bad event — it is a big problem for people who cannot cope by themselves.**

**Disaster Risk?**

**Disaster risk is the chance that a disaster might happen and cause damage. It depends on the type of hazard, like a flood or earthquake. It also depends on how many people or things are in danger. If a lot of people live in a risky area, the risk is higher. Another important part is vulnerability — how much damage the people or buildings can suffer. For example, old houses are more likely to be damaged in an earthquake than new, strong buildings. Disaster risk also depends on how prepared people are. If they know what to do, the risk can be less. Understanding disaster risk helps us plan better and keep people safe.**

**Disaster Risk Management (DRM)?**

**Disaster Risk Management means planning and acting to lower the chance of disasters and reduce their harm. It includes steps taken before, during, and after a disaster. Before a disaster, it means preparing by making plans, building strong houses, and teaching people what to do. During a disaster, it means acting quickly to save lives and help people. After a disaster, it means fixing damage and helping people recover. DRM is a continuous process — it never stops because risks always exist. Governments, communities, and organizations work together in DRM. The goal is to protect people, save lives, and reduce damage. Good DRM makes communities stronger and safer from disasters.**

**What is Risk Management?**

Risk Management is the process of identifying, assessing, and controlling risks that could harm an organization, project, or individual. Risks are uncertain events or conditions that, if they happen, can cause negative effects such as financial loss, damage to reputation, injury, or failure to meet goals. The purpose of risk management is to reduce the chance of bad things happening or lessen their impact if they do occur. It helps people and organizations make better decisions by preparing for possible problems before they happen. Risk management is important in many fields such as business, healthcare, construction, finance, and disaster management. It allows organizations to use

their resources wisely by focusing on the biggest risks first and finding ways to avoid or handle them effectively.

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**Key Concepts of Risk Management**

1. **Risk Identification:**
   This is the first step where potential risks are discovered. It involves looking at what could go wrong by analyzing internal and external factors. For example, a company might identify risks like cyber-attacks, natural disasters, or supplier delays. Risk identification helps prepare for problems early rather than reacting later.

2. **Risk Assessment (or Risk Analysis):**
   Once risks are identified, they are studied to understand how likely they are to happen and how bad their impact could be. This step often involves rating risks based on their probability and severity. It helps prioritize which risks need the most attention.

3. **Risk Evaluation:**
   After assessing risks, decision-makers compare the level of risk against their risk tolerance or acceptable level. This helps decide which risks need treatment and which can be accepted as they are. It also helps in deciding what resources to allocate for risk management.

4. **Risk Treatment (or Risk Control):**
   This involves deciding how to handle each risk. There are several ways to treat risk:
   - **Avoidance:** Stop doing the activity that causes the risk.
   - **Reduction:** Take steps to lessen the chance or impact of the risk.
   - **Transfer:** Shift the risk to another party, such as buying insurance.
   - **Acceptance:** Accept the risk if it is small or unavoidable, while monitoring it.

5. **Monitoring and Review:**
   Risk management is an ongoing process. Risks can change over time, so it is important to keep checking and updating the risk management plan. This ensures new risks are identified and existing risks are controlled effectively.

6. **Communication and Consultation:**
   Good risk management involves sharing information and talking with all stakeholders, including employees, management, customers, and partners. This helps everyone understand the risks and what is being done to manage them. It also encourages cooperation and better decision-making.

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**Why is Risk Management Important?**

Risk management helps organizations avoid surprises that can cause big problems. By planning for risks, organizations can save money, protect their reputation, keep people safe, and improve their chances of success. It also helps create a culture of awareness where everyone understands the importance of identifying and managing risks. This way, problems can be spotted early, and solutions can be found before things get worse.

**Crisis management** is the process of dealing with sudden and unexpected events that can harm people, businesses, or communities. A crisis can be anything serious, like a natural disaster (earthquake or flood), a fire, a major accident, a cyberattack, or a company scandal. These events can create fear, confusion, or panic and may damage property, lives, money, or reputation. The main goal of crisis management is to respond quickly and correctly to reduce harm and help things return to normal.

Crisis management includes planning before a crisis happens, acting during the crisis, and learning after it ends. Before a crisis, organizations create a **crisis plan**, train people, and set up clear communication methods. During a crisis, leaders must make fast and smart decisions, give clear instructions, and provide support to those affected. After the crisis, they review what happened, fix any mistakes, and improve their plans for the future. Effective crisis management helps save lives, protect assets, and maintain trust in leadership or an organization.

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**Risk Management (Before Disaster)**

**Mitigation and Prevention**
This step focuses on reducing the likelihood and impact of potential disasters. It includes long-term measures such as constructing flood barriers, enforcing building codes, and improving drainage systems. The goal is to minimize the causes and effects of disasters before they happen.

**Preparedness**
Preparedness involves planning and organizing resources and people to be ready in case a disaster occurs. It includes creating emergency plans, conducting training drills, setting up warning systems, and preparing emergency supplies. It ensures communities can respond quickly and effectively when a crisis hits.

**Prediction and Early Warning**
This step uses tools and technology to monitor conditions and forecast potential disasters. For example, meteorological systems may predict hurricanes or droughts. Early warning systems alert people in advance, allowing them to take action to stay safe and reduce damage.

**Protection**
Protection includes physical, structural, and non-structural measures to defend people, property, and

infrastructure. Examples include safe buildings, protective legislation, insurance policies, and public awareness campaigns to ensure resilience before a disaster.

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**Disaster Happens**

This is the turning point when a crisis strikes, such as an earthquake, flood, fire, or storm. It marks the transition from proactive risk management to reactive crisis management. The focus shifts from prevention to immediate response and recovery.

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**Crisis Management (After Disaster)**

**Impact Assessment**
After a disaster, authorities and organizations assess the damage. This includes identifying affected people, infrastructure, and the environment. Impact assessment helps prioritize actions and allocate resources effectively for recovery and relief efforts.

**Response**
The response phase includes immediate actions to save lives, reduce suffering, and prevent further damage. This involves rescue operations, providing food, water, medical aid, and shelter to those affected. Quick and effective response is critical in minimizing the impact.

**Recovery**
This stage aims to restore essential services and return life to normal as soon as possible. It includes repairing roads, restoring electricity and water supply, and helping people return to their homes. Recovery may take days to months depending on the severity of the disaster.

**Reconstruction**
Reconstruction is a long-term process where damaged structures and systems are rebuilt, often stronger and more resilient than before. It includes rebuilding homes, schools, hospitals, and infrastructure. This stage also involves policy changes and investment in future disaster risk reduction.

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**Cycle Continuity**

Recovery and reconstruction feed back into **risk management**. Lessons learned from the disaster help improve future mitigation and preparedness. This creates a continuous cycle of improvement, making societies more resilient to future disasters.

# DISASTER MANAGEMENT CYCLE

Sure! Here's the explanation divided into **three separate paragraphs** as you requested:

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**Disaster Management** in India refers to the organized efforts to reduce the impact of natural and man-made disasters. It includes planning and actions before, during, and after a disaster to save lives, reduce damage, and help communities recover quickly. The main aim is to minimize the loss of life and property and to ensure that emergency support reaches the affected people without delay. Disaster management involves the government, organizations, emergency services, and citizens working together to respond effectively to any disaster.

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The **Disaster Management Cycle** is a continuous process made up of four main stages: **mitigation, preparedness, response, and recovery**. Mitigation involves taking steps to reduce the future impact of disasters, like building stronger infrastructure or planting trees to prevent landslides. Preparedness means making plans, conducting mock drills, training emergency teams, and setting up early warning systems. The response phase includes rescue operations, medical care, food distribution, and emergency relief during the disaster. The recovery phase helps people rebuild their homes, restore services like electricity and water, and return to normal life. This cycle helps ensure a complete and organized approach to handling disasters.

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India is highly vulnerable to disasters due to its unique geography and climate. About **60%** of the land is prone to **earthquakes**, **40 million hectares** are vulnerable to **floods**, **8%** of the land faces **cyclones**, and **68%** is affected by **droughts**. In the decade from 1990 to 2000, over **4,344 people** died and around **30 million people** were affected by disasters every year. These events also caused large-scale damage to homes, roads, and public property. To deal with these challenges, agencies like the **National Disaster Management Authority (NDMA)** and local authorities coordinate relief and recovery efforts, with support from communities and volunteers.

**1. Preparedness**

Preparedness is all about getting ready before a disaster happens. It means planning carefully so that when an emergency comes, people and organizations don’t panic but know exactly what to do. This includes writing detailed plans that explain how to act at the local community level, across regions, and even nationally. To make sure these plans work well, emergency teams and communities practice through drills and training sessions. Preparedness also involves spreading awareness among the public, teaching them about possible dangers and how to stay safe. Early warning systems are put in place to alert people quickly when a disaster is about to happen, giving them time to prepare or evacuate. Stockpiling supplies like food, clean water, medicines, and rescue tools ensures that help is ready to reach people immediately. Emergency shelters are set up to provide safe places for those who must leave their homes. Overall, preparedness helps reduce confusion, save lives, and allow a quick, organized reaction to disasters.

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**2. Response**
Response is the phase where action is taken immediately after a disaster strikes to help people survive and reduce suffering. This is the busiest time when emergency workers, government teams, volunteers, and organizations work together to carry out rescue missions. They search for people trapped or in danger and evacuate them to safe areas. Medical teams provide emergency treatment to the injured to prevent deaths and serious health problems. At the same time, essential supplies like food, water, clothing, and shelter are distributed to those who lost their homes or cannot access basic needs. Efforts are made to restore vital services like electricity, roads, communication networks, and water supply, which are important to keep the relief operations running smoothly. Coordination during response is very important so that resources are not wasted, and help reaches the right people at the right time. The main goal of response is to save lives, protect health, and reduce further damage to the community.

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**3. Recovery**
Recovery begins once the immediate danger has passed and focuses on helping the affected community rebuild and return to normal life. It involves repairing or rebuilding damaged infrastructure such as homes, schools, hospitals, roads, and bridges. This process also includes restoring basic services like water supply, electricity, and healthcare. Recovery is not only physical rebuilding; it also includes helping survivors emotionally and mentally because disasters often cause trauma, fear, and loss. Support programs provide counseling and social services to help people cope. Economic recovery is a key part, too—people need to return to work and restart businesses, farmers need to plant crops again, and shops must reopen to revive the local economy. Recovery can be a long process, lasting months or years, depending on how bad the disaster was. During recovery, communities also try to build stronger systems and infrastructures to be better prepared for future disasters, learning from past mistakes to reduce risk.

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**4. Development**
Development in disaster management means building communities that are strong, safe, and able to withstand disasters over the long term. It involves planning and creating infrastructure that is resistant to hazards. For example, buildings and bridges are designed to stand strong during earthquakes or heavy storms. City planners avoid building homes or important facilities in dangerous areas prone to floods or landslides. Development also includes investing in education so people understand disaster risks and how to protect themselves. Improving healthcare and social services means communities are healthier and better able to deal with emergencies. This phase aims to make the community not just rebuilt but improved—safer, more knowledgeable, and more resilient. Development reduces the chances of disasters causing massive damage and speeds up recovery when disasters do happen.

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**5. Prevention**
Prevention involves taking steps to stop disasters from happening or to reduce their chances. While many natural disasters can’t be completely stopped (like earthquakes or hurricanes), prevention helps lower the risk of damage. This includes enforcing laws and rules, such as banning construction in places known to flood or where landslides often occur. Building codes are made stricter in earthquake zones so buildings are stronger and less likely to collapse. Protecting natural areas like

forests, wetlands, and mangroves helps because these act as natural shields against floods and storms. For example, wetlands can absorb excess water and reduce flooding in nearby towns. Prevention is the cheapest and smartest way to handle disasters because it focuses on reducing the chance of harm before it happens. It lowers vulnerability and protects lives and property.

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**6. Mitigation**

Mitigation means taking action to reduce how bad a disaster's impact will be once it happens. Unlike prevention, which tries to stop disasters, mitigation accepts that some disasters will occur but tries to lessen the damage they cause. Examples of mitigation include building earthquake-resistant homes that won't collapse easily or creating flood defenses like dams, levees, or drainage systems that control water flow and protect towns. Crop insurance and other financial safety nets help farmers and families recover quickly if their crops or property are damaged. Education campaigns teach people how to prepare themselves and their homes to survive disasters. Mitigation helps reduce the cost of emergency response and recovery because damage is less severe, and communities bounce back faster.

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**Disaster Mitigation/prevention**

**Mitigation activities actually reduce the probability of disaster occurrence, or reduce the effects of unavoidable disasters.**

- ❖ **Mitigation measures include**
- **Building codes;**
- **Vulnerability analyses updates;**
- **Zoning and land use management;**
- **Building use regulations and safety codes;**
- **Preventive health care**
- **Public education.**
- **It will depend on the incorporation of appropriate measures in national and regional development planning. Its effectiveness will also depend on the availability of information on hazards, emergency risks, and the counter measures to be taken.**
- **The mitigation phase, and indeed the whole disaster management cycle, includes the shaping of public policies and plans that either modify the causes of disasters or mitigate their effects on people, property and infrastructure.**

**Mitigation measures may include but not restricted to:**

**Enforcement of building codes, floodplain management codes and environmental regulations.**

➢ **Public safety measures such as continual maintenance of roadways and dams.**

➢ **Land-use planning (zoning) and controlling human activities in hazard prone areas**

➢ **Earthquake resistant construction, permanent houses**

➢ **Community health and sanitation (improving nutrition, keeping the community clean, immunization, herbal gardens, training of community health workers)**

➢ **Deployment of warning systems to alert and notify the public.**

**Structural mitigation**

- **Any physical construction to reduce or avoid possible impacts of hazards or application of engineering techniques to achieve hazard resistance.**
- **Components**

❖ **Resistant construction**

❖ **Building codes and regulatory measures**

❖ **Relocation**

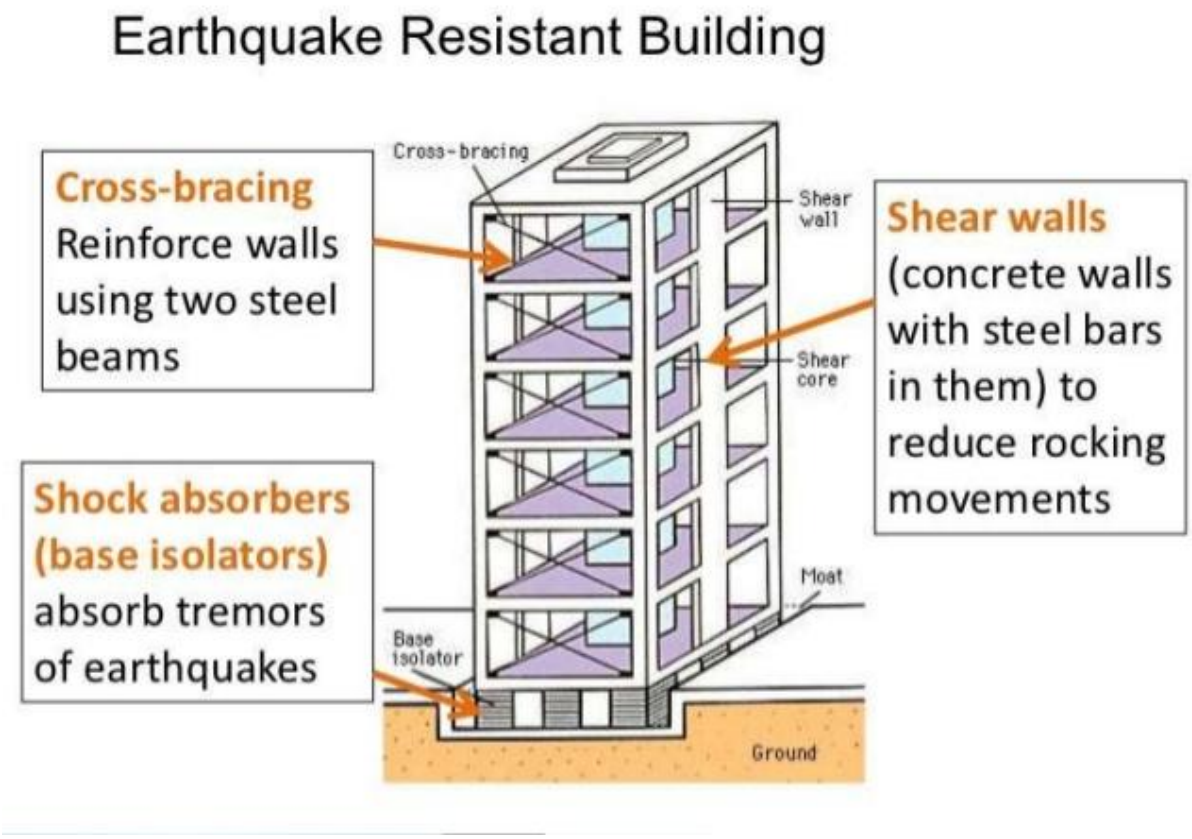
❖ **Structural modification**

❖ **Plinth beam**

❖ **Foundation**

**Structural mitigation (building construction) mainly depends on**

- **Geographical area of building construction**
- **Earthquake zoning of building construction**
- **Type of structure- frame, load bearing or wooden.**
- **Soil pattern –Rocky or Sandy**
- **Roofing pattern – RCC, mud tiles, cement or steel sheet**
- **Age of building**




**Non-Structural mitigation**

- **Any measure not involving physical construction that uses knowledge, practice or agreement to reduce risk or impacts.**
- **These include that are either attached or kept in the building**

**Furniture**

**Electrical wirings**

**Doors and windows**

**Fire extinguishers**

**Smoke in airways**

**Risk identification of Non-Structural mitigation**

- **Damage to belongings**
- **Damage to furniture and equipment**
- **Hazards around the area**

**Non-structural activities – policies and practices which raise awareness of hazards or encourage developments to reduce the impact of disasters**

**i.e., Public awareness**

**i. different types of insurance**

**ii. family plans for some emergency situation**

**Strategies:**

- **Hazard identification and vulnerability analysis.**
- **Various mitigation strategies or measures-**

**For instance, varieties of crops that are more wind, flood or drought resistant can often be introduced in areas prone to floods, drought and cyclones, Economic diversification.**

**Disaster mitigation and infrastructure**

- **Investment in infrastructure to support sustainable socio-economic development**
- **Investment in infrastructure for reconstruction and recovery.**

i. **A backup generator is available in case of power failure and that a battery-operated radio.**

ii. **A backup copy of all critical information.**

iii. **The preliminary design should take into consideration the prevalent hazards and methods to avoid or to minimize the effects of the extreme natural events.**

iv. **Strengthening vulnerable areas such as roofs, exterior doors, windows, and garage doors**

**Disaster and development**

- **Disasters set back development programming, destroying years of development initiatives.**
- **Rebuilding after a disaster provides significant opportunities to initiate development programs**
- **Development programs can increase an area's susceptibility to disasters.**
- **Development programs can be designed to decrease the susceptibility to disasters and their negative consequences**

**Preparedness**

- **The goal of emergency preparedness programs is to achieve a satisfactory level of readiness to respond to any emergency situation through programs that strengthen the technical and managerial capacity of governments, organizations and communities.**
- **These measures can be described as logistical readiness to deal with disasters and can be enhanced by having response mechanisms and procedures, rehearsals, developing long-term and short-term strategies, public education and building early warning systems.**
- **Preparedness can also take the form of ensuring that strategic reserves of food, equipment, water, medicines and other essentials are maintained in cases of national or local catastrophes.**

**During the preparedness phase, governments, organizations, and individuals develop plans to save lives, minimize disaster damage, and enhance disaster response operations.**

**Preparedness measures include:**

- **preparedness plans**
- **emergency exercises/training**
- **warning systems**
- **emergency communications systems**
- **evacuations plans and training**
- **resource inventories**
- **emergency personnel/contact lists**
- **mutual aid agreements and public information/education.**
- **As with mitigations efforts, preparedness actions depend on the incorporation of appropriate measures in national and regional development plans.**
- **In addition, their effectiveness depends on the availability of information on hazards, emergency risks and the counter measures to be taken, and on the degree to which government agencies, non-governmental organizations and the general public are able to make use of this information.**

**Nodal agencies for Disaster Management**

| Disasters | Agencies |
|---|---|
| Cyclone | Indian Meteorological Department |
| Tsunami | Indian National Centre for Oceanic Information Services |
| Floods | Central Water Commission |
| Landslides | Geological Survey of India |
| Avalanches | Snow and Avalanche Study Establishment |
| Heat & Cold Waves | Indian Meteorological Department |

**Response**

- **The aim of emergency response is to provide immediate assistance to maintain life, improve health and support the morale of the affected population.**
- **Such assistance may range from providing specific but limited aid, such as assisting refugees with transport, temporary shelter and food, to establishing semi-permanent settlement in camps and other locations. It also may involve initial repairs to damaged infrastructure.**
- **The focus in the response phase is on meeting the basic needs of the people until more permanent and sustainable solutions can be found. Humanitarian organizations are often strongly present in this phase of the disaster management cycle.**
- **To save lives and minimize destruction it is necessary to take actions before warning phase and during and post disaster phase.**

- **An effective response means quick and appropriate actions to save lives and property.**
- **Response can be defined as "actions and capability to react to the sudden onset of a disaster under stress, uncertainty, various constraints and limited resources."**

**In response phase timing in timing is very important factor. It involves:**

- **Getting information on the intensity and magnitude of the hazard, possible locations of impacts, vulnerabilities and information on the available resources.**
- **Implantation pre impact precautionary measure during the warning and alerts period.**
- **Organizing appropriate rescue and relief operations while utilizing the available resources efficiently and effectively.**
- **Availability of temporary shelters and basic facilities ensuring access to sufficient stocks of essential and relief supplies**
- **Developing command system for rapid allocation of funds, relief and disbursement**

**Response is the first reaction of the community and concern authorities at the onset of a disaster. It mainly depends upon the preparedness of the community or the authorities through training and awareness of the available equipment and resources.**

**Recovery**

- **Recovery is the fourth phase of disaster and is the restoration of all aspects of the disaster's impact on a community and the return of the local economy to some sense of normalcy. By this time, the impacted region has achieved a degree of physical, environmental, economic and social stability.**
- **The recovery phase of disaster can be broken into two periods:**

i. **The short-term phase typically lasts from six months to at least one year and involves delivering immediate services to businesses.**

ii. **The long-term phase, which can range up to decades, requires thoughtful strategic planning and action to address more serious or permanent impacts of a disaster.**

iii. **As the emergency is brought under control, the affected population is capable of undertaking a growing number of activities aimed at restoring their lives and the infrastructure that supports them.**

iv. **There is no distinct point at which immediate relief changes into recovery and then into long-term sustainable development.**

v. **There will be many opportunities during the recovery period to enhance prevention and increase preparedness, thus reducing vulnerability. Ideally, there should be a smooth transition from recovery to on-going development.**

vi. **Actions taken immediately following a disaster or during the slow onset of a severe impact require exceptional measure to save and sustain the lives of survivors and meet their basic needs until normalcy is restored.**

vii. **These measures involve fulfilling basic needs of shelter, protection, water, food and medical attention. There are different emerging software like Evolven in Disaster recovery monitoring which provide visibility in recovery management.**

viii. **Effective disaster management information is very important component of response and recovery. Mainly it provides timely information before, during and after the hazard.**

**In this phase following are the list of activities:**

- **Search and rescue activities**
- **Providing food, first aid and evacuation assistance**
- **Quick communication and transport facility to the affect area which will help in the affected people.**

**Recovery management phase: where actions are taken to normalize the situation depending upon the intensity of the disaster and its impact. Basically recovery is a long term activity which include:**

- **Rehabilitation**
- **Restoration of economic activities**
- **Livelihoods**
- **Infrastructure**
- **Medical facilities**
- **Basic standards of life**
- **Reconstruction and shelter facilities**

**Recovery activities continue until all systems return to normal or better. Recovery measures, both short and long term, include returning vital life-support systems to minimum operating standards**

- **temporary housing;**
- **public information;**
- **health and safety education;**
- **reconstruction;**
- **counseling programs**
- **economic impact studies.**

**Information resources and services include data collection related to rebuilding, and documentation of lessons learned.**

**Planning for relief:**

- **Disaster relief (or emergency management) refers to the process of responding to a catastrophic situation, providing humanitarian aid to persons and communities who have suffered from some form of disaster.**
- **Activities at each level (individual, group, community) affect the other levels.**

- **Coordinated multi-agency response to reduce the impact of a disaster and its long term results**

**Relief activities include:**

- **Rescue, relocation**
- **Providing food and water**
- **Preventing disease and disability**
- **Repairing services such as telecommunication and transport**
- **Providing temporary shelter and emergency health care**

**Components of disaster relief**

- **It includes water, food, hygiene, sanitation and waste management**
- **Prepare an emergency food supply: atleast a supply of 3 day food**
- **Prepare an emergency water supply**

**Development initiatives for countries faced with disasters.**

- **Partnership - close collaboration among donors, governments, communities, nongovernmental organizations, the private sector, and universities }**
- **Flexibility - Development agencies must be efficient and flexible; adaptable to local environments and capable of adjusting to changing conditions and seizing opportunities when they arise.**
- **Selectivity - resources are the public asset that must be invested prudently to achieve maximum impact.**

**Occurrences of disasters such as floods, earthquakes, cyclones, etc simply cannot be stopped from taking place. They are the part of the environment we live in. What can be done, however, is to take preventive measures at various levels of society in order to make the impact of such hazards as harmless as possible for people and people's properties. The impact of these natural hazards can be reduced; its worst effects can be prevented by implementing good disaster management mechanism.**

**Do's and Don'ts**

**A. Fire**

1. Do not panic; keep calm, think and act quickly.

2. Activate the manual fire alarm system provided on the floor to raise alarm.

3. Report to security.

4. Summon the fire brigade on telephone No. 101.

5. Alert the people in the vicinity of fire.

6. Do not take shelter in the toilet.

7. Fight the fire only if you can. Do not take undue risk.

8. If you know the details of fire/fire extinguishing system provided, inform the fire brigade personnel on their arrival.

**B. Cyclone**

(a) Before the Cyclone season

- Concern authority would inspect the building; secure loose tiles, carry out repair works for doors and windows.
- Remove dead woods or dying trees close to the building; anchor removable objects like lumber piles, loose tin sheds, garbage cans, sign-boards etc. which can fly in strong winds
- Emergency light with extra batteries, battery operated torches, battery operated radio and enough dry cells would be kept at society office
- Check first aid kit box regularly.

(ii) When the Cyclone starts

- Listen to the radio (All India Radio stations give weather warnings).
- Keep monitoring the warnings. This will help one to prepare for a cyclone emergency.
- Pass on the information to others. But one must not to spread rumours.
- Ignore rumours and do not spread them; this will help to avoid panic situations.
- Believe in the official information.
- Developer would be built the proposed building with all the measures to withstand high velocity wind.
- Residents would be made aware to switch off electrical mains at emergency situation.

(iii) Post-cyclone measures

- One must get inoculated against diseases immediately.
- Concern authority will clear all the debris from the premises.

**C. Floods**

The concerned authority should take the following measures as soon as they receive flood warning:
Closing of sewer wells
Torch
Batteries
Emergency light
Acquiring sufficient food material and potable drinking water Maintenance of First Aid Kit. This First Aid Kit should include disinfectant (Dettol), dressing material, soap, band aid, antiseptic cream, medicines, antibiotics, and scissor

Measures after Floods

* During floods, incidence of water borne and vector-borne diseases increases. Hence all the staffs and members of the society would be advice to undergo a

thorough medical check-up for betterment of their health.

* All the underground and overhead tanks must be cleaned and disinfected. This must be carried out in presence of qualified staff. Developer would assist in identifying the concern authority or NGO who carried out this kind of activities.
* The flood affected area must be disinfected. Any water which was stored during floods (in pits, vessels, drums etc.) should be cleaned and disinfected. This would prevent growth and spread of vectors.
* Desilting and cleaning of storm water channels should be carried out by concerned authority. Developer would assist in carrying out this activity.

**D. Earthquake**

<u>If one is outdoor at the time of earthquake</u>

* If open space is available nearby, go there
*Keep away from tall chimneys, buildings, balconies and other projections

* Do not run through streets; hoardings or lamps may fall.

<u>If one caught indoors at the time of an earthquake</u>

* Be calm
* Stay indoors until the shaking stops
* Stay away from glass windows, doors, cupboards etc.
* Stay away from falling plaster, bricks or stones
* Get under a table so that one does not get hurt by falling objects
* Do not rush towards the doors or staircase. They may be broken or jammed
* If one goes outside, move quickly away from the building to prevent injury from falling debris
* Be aware that fire alarm and sprinkler systems frequently go off in buildings during an earthquake, even if there is no fire. Check for and extinguish small fires, and exit via stairs.

<u>Avoid the following in an earthquake</u>

*Do not crowd around damaged areas or buildings
*Do not waste water. It will be needed for firefighting.
* Do not move the seriously hurt people
* Wait for medical help to arrive
*Do not spread rumors. They lead to panic and worsen the situation

<u>After an earthquake</u>

* Check if anyone else is hurt. Use first aid at least on the cuts and bruises
* Keep the streets clear for emergency services
* Switch off all appliances like the refrigerator, TV or Computers
* Turn off the gas

* A battery operated radio would aid in receiving important messages
* Use the stairs, not an elevator
* Listen to a portable, battery-operated radio or television for updated emergency information and instructions
* Cellular telephone equipment is subject to damage by quakes and cell phones may not be able to get a signal, but regular “land line” phones may work
* Open closet and cabinet doors cautiously as contents may have shifted during the

shaking and could fall, creating further damage or injury
* Watch out for fallen power lines or broken gas lines, and stay out of damaged areas
* Stay out of damaged buildings. Damaged buildings may be destroyed by aftershocks following the main quake
* Be alert for and observe official warnings
* Do not smoke; smoking in confined areas can cause fires.
All of these could be listed, shared and displayed near society office or lobbies

Capacity Building: Concept- Structural and Non-structural Measures Capacity Assessment; Strengthening Capacity for Reducing Risk- Counter-Disaster Resources and their utility in Disaster Management- Legislative Support at the state and national levels

**Unequal Effects of Earthquakes**
Sometimes, earthquakes of the same strength cause very different levels of damage. One place might suffer major destruction and loss of life, while another stays mostly safe. This happens because the level of preparation and resources—the "capacities"—of the people living there are different. A well-prepared community is less affected by disasters.

**What Are Capacities?**
Capacities are the strengths and resources that help a community protect itself and recover from disasters. A community that has strong capacities can recover more quickly and suffer less. For example, a place with good hospitals, early warning systems, and trained emergency teams will cope better than a place that lacks these.

**Understanding Recovery**
Getting back to normal after a disaster is called recovery. It includes fixing homes, healing emotional wounds, and restoring daily life. This is not an easy process, but with proper support and planning, recovery and rebuilding can be faster and more effective.

**Why Capacity Building Matters**
Disasters often strike without warning. Although we cannot always stop them, we can reduce their damage by being prepared. Capacity building—like teaching people what to do in an emergency and making sure help is available—helps in dealing with disasters better.

**Definition of Capacity**
Capacity means the abilities, strengths, and resources a community or person has to reduce disaster risk. It also includes how well people can handle problems and grow afterward. In simple words, it is the power to deal with challenges like disasters.

**Three Types of Capacity**
There are three main types of capacity in disaster management: an enabling environment, which includes good laws and policies; organizational capacities, which are the systems and strategies inside institutions; and individual capacities, which are the personal skills and knowledge people have.

**Enabling Environment**
An enabling environment is a system that supports people and communities to deal with disasters. This includes having strong government policies, fair laws, good leadership, and values that help people work together. When the environment supports disaster management, communities are safer.

**Organizational Capacities**
Organizations like disaster response teams, hospitals, or government offices must have clear plans, trained staff, and strong systems. These internal strengths help them respond quickly and effectively when disasters happen.

**Individual Capacities**
Each person has unique strengths based on their knowledge, skills, health, and background. These personal abilities help people take the right action during a disaster. For example, someone trained in first aid can help others when needed.

**Managerial Capacities**
These are management-related capacities needed to plan, implement, and monitor disaster programs. This includes things like knowing how to create a budget, write policies, involve the community, and evaluate results after a disaster response.

**Technical Capacities**
Technical capacities are the specialized skills needed for specific tasks during disasters. For example, engineers may know how to make earthquake-resistant buildings, and doctors know how to treat injuries. These expert skills are very important in saving lives.

**What Is Capacity Building?**
Capacity building is the process of helping people and institutions become better at handling disasters. It includes training, leadership development, managing resources, and creating good systems. The goal is to make everyone stronger and more ready.

**Focus of Capacity Building**
Capacity building helps people and organizations grow. It teaches them how to manage problems, adapt to change, and become more skilled. It focuses on human resources, institutions, and how they can work better together for disaster management.

**Capacity Building in India**
In India, the National Institute of Disaster Management (NIDM) trains people at the national level. States also have their own training programs. Many institutions work to teach people how to prevent and deal with disasters through workshops and drills.

**Long-Term Nature of Capacity Building**
Capacity building is not a one-time thing. It is a long-term, ongoing process. It takes time and effort to build systems, skills, and awareness that make communities stronger and better prepared for disasters.

**Training Needs Assessment**
There is a need to regularly assess what training and skills are required. We must identify clear goals, understand what knowledge or tools are missing, and provide the necessary training. This helps communities and people respond better to disasters.

**Stage 1: Assessing Needs and Gaps**
In the first stage of capacity building, we study what a community already has and what it needs. We find the gaps between available and required resources and then plan how to fill those gaps. This step helps in effective planning for disaster readiness.

**Stage 2: Providing Resources**
Once the needs are identified, the second stage is to provide the required resources. This could mean giving training, building shelters, or supplying tools. Governments and institutions play a major role in providing these resources.

**Stage 3: Using Resources Effectively**
After receiving resources, the community or individuals need to use them properly. This stage

focuses on how effectively the provided resources are being used. It checks if people are prepared to act in a real disaster.

**Stage 4: Maintaining and Restoring Resources**
This final stage looks at whether the resources are being maintained and kept ready. It also includes restoring resources that were used during a disaster so that the community remains prepared for future events.

## Stakeholders in Capacity Building

**Role of Government**
The government is the main authority in disaster management and planning. It creates laws, policies, and disaster response frameworks that guide actions during emergencies. Government agencies organize training programs, run drills, and invest in early warning systems. They also allocate budgets to support relief operations and build infrastructure like shelters and flood defenses. Coordination among departments like health, police, and transport is led by the government. Their leadership ensures an organized and large-scale response during disasters.

**Role of International Organizations**
International organizations such as the United Nations and World Health Organization offer financial and technical help during disasters. They provide emergency aid like food, medicine, and shelter to affected countries. These organizations also help countries build long-term disaster resilience through training and knowledge sharing. They support disaster risk reduction policies and global cooperation. In many cases, they bring in advanced technologies for forecasting and early warning. Their role helps poor or disaster-prone countries strengthen their response capacity.

**Role of NGOs**
Non-Governmental Organizations (NGOs) often act quickly to provide food, clean water, clothes, and medical help in disaster zones. They stay closely connected with local people and understand their specific needs. NGOs also organize workshops and awareness programs to teach communities how to stay safe. They support rebuilding efforts after the disaster, such as repairing houses and restoring livelihoods. Many NGOs focus on vulnerable groups like women, children, and the elderly. Their work helps fill the gaps when government aid is delayed or unavailable.

**Role of Local Communities**
Community members are the first to notice a disaster and often the first to help. Their knowledge of the area helps in planning evacuation routes and identifying safe shelters. Local volunteers help rescue people, distribute aid, and share important information. Training local people in first aid and emergency response builds long-term resilience. Their involvement in disaster planning ensures the solutions are practical and culturally appropriate. Empowering local communities leads to faster recovery and better preparedness.

**Role of Researchers and Academics**
Researchers study natural hazards and human behavior during disasters to suggest better strategies. They create models to predict risks like floods, cyclones, and earthquakes. Their findings help the government and organizations plan more effective disaster responses. Academic institutions also run courses and workshops to train disaster managers. They contribute new technologies and tools like hazard mapping and risk analysis. Their work bridges science and practice in disaster management.

**Role of Armed Forces**
The armed forces are trained to act quickly and efficiently in emergencies. They help rescue people

trapped in floods, earthquakes, and other disasters. Their helicopters, boats, and skilled teams are vital for reaching remote or damaged areas. They also help set up temporary shelters and distribute relief supplies. During major disasters, the army often takes charge of restoring order and rebuilding roads or communication lines. Their discipline and readiness make them a key force in disaster response.

**Role of Disaster Management Institutions**
Disaster management institutions are special government bodies formed to handle emergencies. They coordinate planning, training, rescue, and recovery operations across the country. These institutions make sure help reaches the right place quickly and effectively. They also monitor risks and run drills to prepare people in advance. Institutions like national disaster management authorities often work with local and international partners. Their role is central to building strong, nationwide disaster resilience.

**Need for Pre-Capacity Building Assessment**
Before we start building capacity, it is important to understand who needs help, what they need, and why. Different people and organizations may need different types of training and support.

**Strengthening Institutions**
Institutions need to be strong and efficient to manage disasters. This means updating policies, laws, and systems to make sure they are prepared for both disaster prevention and recovery. A strong institution leads to a safer community.

**Institutional Reforms**
This includes forming dedicated disaster offices, updating old laws, making new partnerships, and organizing regular training. These steps help in making institutions better at handling disaster situations.

# National Policy on Disaster Management (NPDM)

The National Policy on Disaster Management (NPDM) is a policy that outlines who is responsible for what in disaster situations. It ensures everyone knows their role, which helps in faster and better disaster response.

**Importance of Leadership**
Good leaders are essential for disaster management. Leadership includes having a clear vision, good skills, and the ability to inspire others. Leaders can be formal (like officials) or informal (like community elders). They help in guiding people before, during, and after disasters.

**Leadership Training**
Leadership training programs help youth, volunteers, and community leaders learn how to respond to disasters. These programs create leaders who can take action and guide others during emergencies.

**Role of Knowledge and Awareness**
Knowledge is power in disaster management. When people understand the risks and know what to do, they can save lives. Awareness programs, school lessons, and training sessions help build this knowledge. Activities like fire drills teach people what to do during real disasters.

**Accountability in Disaster Management**
Accountability means that every person and organization should do their part. For example, hospitals

must treat the injured, and governments must provide shelter. If everyone does their duty honestly and on time, disaster response becomes much more effective.

**Mechanisms for Accountability**
Being accountable also means checking your own actions. Legal systems, feedback mechanisms, and partnerships help ensure that people and institutions are following disaster laws and plans properly.

**Important Capacity Building Activities**
Important actions in capacity building include teaching people how to prepare for disasters, training local communities, working with relief groups, conducting mock drills, promoting first aid knowledge, and making sure households have emergency plans. These steps help everyone be ready and safe.

Sure! Here's a detailed explanation of **structural** and **non-structural measures** of capacity assessment with subheadings:

# Structural Measures

Structural measures are physical constructions or engineering solutions designed to minimize the damage caused by disasters. These measures involve building infrastructure that can withstand or reduce the impact of hazards such as floods, earthquakes, or storms. Examples include dams and levees which control or divert floodwaters away from vulnerable areas, thus preventing flooding. Cyclone shelters and earthquake-resistant buildings are constructed to protect people during extreme weather events and seismic activities. Storm drainage systems help in managing heavy rainfall and reducing urban flooding. These physical measures require significant investment but provide a tangible defense against disasters. Structural solutions often form part of long-term disaster risk reduction strategies. They are essential in areas prone to frequent or severe hazards. However, structural measures alone cannot eliminate all risks and need to be complemented by other approaches.

## Non-Structural Measures

Non-structural measures involve planning, policies, awareness, and education to reduce disaster risks without relying on physical infrastructure. These include creating early warning systems that alert communities about impending hazards, allowing people to prepare or evacuate in time. Disaster preparedness education helps individuals and communities understand the risks they face and how to respond effectively. Emergency drills and training ensure that people know what actions to take during disasters, improving overall readiness. Land use planning and zoning laws regulate where buildings can be safely constructed, preventing settlement in high-risk areas. Legal frameworks and policies support coordinated disaster management efforts and resource allocation. Non-structural measures are often more cost-effective and can be implemented quickly compared to structural ones. They also foster a culture of safety by involving communities directly in disaster risk reduction. When combined with structural measures, non-structural strategies enhance overall resilience and capacity to manage disasters.

## Strengthening Capacity for Reducing Risk-

## What is Capacity Assessment?

Capacity assessment is the process of understanding how people behave during disasters to

reduce harm. It looks at how they protect their homes, families, and work when problems happen. This helps to see what people already know and what they need help with. It also looks at their past experiences with disasters to learn what worked well. Knowing this helps plan better ways to prepare and respond in the future. It focuses on the strengths and skills that communities already have.

## What is Capacity?

Capacity means the strengths, resources, and abilities that people and communities have to deal with disasters. These can be physical things like tools and equipment, social support from friends and groups, or motivation and willingness to act. Capacity helps people prepare before a disaster, survive during it, and recover afterward. It is important because it makes communities stronger and less vulnerable. Without capacity, disasters can cause more damage and suffering. Capacity is different for every person and community depending on what they have.

## How Do We Do Capacity Assessment?

To assess capacity, we study what people did during previous disasters and how well it worked. We find out what resources (like money, tools, or help from others) the community has. We also see who controls these resources and how they are shared. This helps to identify gaps where more help or training is needed. The goal is to understand both the strengths and weaknesses of the community. This information guides disaster preparedness and response plans.

## Three Levels of Capacity

Capacity exists in three connected levels. First, at the individual level, it means what skills and knowledge a person has. Second, at the organizational level, it means how well groups and institutions function and work together. Third, the enabling environment is the big system of laws, rules, and culture that shapes how people and organizations interact. All three levels affect how well a community can handle disasters. Working on all levels is important for better disaster risk reduction.

## What is the Enabling Environment?

The enabling environment is the set of rules, laws, social customs, and political processes that shape society. It determines how easy or hard it is for people and organizations to work together. A strong enabling environment includes clear policies, good leadership, trust, and motivation. When this environment is healthy, disaster management is more effective. It supports cooperation between government, private sector, and civil society. Without it, even skilled people and organizations may struggle to respond well.

## Organizational Level Capacity

This level is about how well organizations are structured and how they operate. Good organizational capacity means having clear plans, procedures, and teamwork. It also includes having motivated people who want to improve and learn new skills. Organizations with strong capacity can better deliver help and services during disasters. They can coordinate actions and use resources efficiently. Without strong organizations, disaster response may be slow or unorganized.

Individual Level Capacity

This refers to the knowledge, skills, and experience each person has to handle disasters. It includes things like knowing how to stay safe, first aid skills, or how to help others. Building individual capacity is important because people are often the first responders in disasters. However, individual capacity works best when supported by good organizations and a supportive environment. Training and education help improve individual capacity. People also need encouragement and motivation to apply what they know.

Important Disaster Agencies

There are many agencies at different levels that help manage disasters. For example, national Disaster Management Authority (NDMA): Plans and coordinates disaster management at the national level.

- State Disaster Management Authority (SDMA): Manages disaster-related activities within the state.
- District Disaster Management Authority (DDMA): Handles disaster management at the district level.
- National Disaster Response Force (NDRF): Provides rescue and relief during emergencies across the country.
- State Disaster Response Force (SDRF): Offers rescue and relief services within the state.
- National Institute of Disaster Management (NIDM): Trains people and develops disaster management policies.

What Do These Agencies Do?

These agencies create rules and guidelines for disaster management. They train workers and volunteers on how to prepare for and respond to disasters. They work with international groups and other countries to share knowledge and resources. They organize drills and awareness programs in schools and communities to improve readiness. They also help with funding and support for disaster-related projects. Their work helps ensure quick and effective responses when disasters happen.

Conclusion

Capacity building is about helping people, groups, and communities become stronger to face disasters. It involves learning what skills and resources they have and what they need. It helps them prepare better, respond faster, and recover quicker. Building capacity leads to safer communities and less damage from disasters. It is a continuous process that requires effort and cooperation. Good capacity means being ready before disasters and able to bounce back afterward.

# Disaster resources and their utility in DM

**What Are Disaster Resources?**

Disaster resources include everything needed to help before, during, and after a disaster. These can be things like information, tools, money, people, and supplies. They help us prepare for disasters, stay safe during emergencies, and recover afterward.

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**Why Are Disaster Resources Important?**

When a disaster like a flood, earthquake, or drought happens, having the right resources can make a big difference. These resources help in many ways:

- **Reducing damage**: Resources help prepare communities so they can avoid or lessen the harm from disasters.
- **Saving lives**: Quick access to rescue teams, medical care, and emergency supplies can save many people.
- **Helping recovery**: After a disaster, resources help rebuild homes, restore services like electricity and water, and support people to return to normal life.
- **Preparing for future risks**: Resources are used to train people and build systems that make communities stronger against future disasters.

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**How Are Disaster Resources Used in Disaster Management?**

Disaster management has three important stages where resources are used:

**1. Disaster Preparedness**

This stage is all about getting ready before a disaster happens. Resources here include:

- **Planning and training**: Creating emergency plans, teaching people what to do, and practicing drills.
- **Early warning systems**: Tools like weather alerts and sirens that warn people early.
- **Stockpiles of supplies**: Keeping food, water, medicines, blankets, and tents ready to use.
- **Communication tools**: Radios, phones, and internet to share information quickly.

Preparedness helps communities act fast and correctly when disaster strikes.

**2. Disaster Survival (Response)**

This stage happens during the disaster. Resources are needed to protect and help people immediately, such as:

- **Rescue teams and equipment**: Trained people and tools like boats, helicopters, stretchers, and cutting devices to save trapped or injured persons.
- **Shelters**: Safe places where displaced people can stay.
- **Medical supplies**: First aid kits, medicines, doctors, and nurses to treat injuries.
- **Food and clean water**: Essentials for survival when normal supplies are cut off.
- **Communication**: Keeping emergency responders and affected people connected to coordinate help.

These resources save lives and reduce suffering during the disaster.

**3. Disaster Recovery**

After the disaster, resources help rebuild and return life to normal:

- **Reconstruction materials**: Building materials and tools to repair homes, schools, roads, and hospitals.
- **Financial aid**: Money to support affected families, businesses, and government recovery programs.
- **Healthcare and counseling**: Services to treat long-term injuries and mental health issues caused by trauma.
- **Restoration of services**: Bringing back electricity, water supply, sanitation, and transportation.

Recovery resources help communities heal and grow stronger.

**Types of Disaster Resources**

1. **Human Resources**
   People are the most important resource. This includes:

- Rescue workers
- Medical teams
- Volunteers
- Community leaders
- Trainers and educators

They provide skills, knowledge, and manpower during all stages of disaster management.

2. **Physical Resources**
   These are the tools and materials needed, such as:

- Emergency vehicles (ambulances, fire trucks, boats)

- Rescue equipment (ropes, stretchers, cutting tools)
- Food, water, and medicine supplies
- Shelters and tents
- Communication devices (radios, phones)

3. **Information Resources**
   Information helps make better decisions. Examples include:

- Maps of disaster-prone areas
- Weather forecasts and warnings
- Data on past disasters and risks
- Communication networks for alerts and coordination

4. **Financial Resources**
   Money is necessary to buy supplies, pay workers, run programs, and rebuild. Governments, organizations, and donors provide funding.

## - Legislative Support at the state and national levels

### **1**. International Law

International law refers to a set of rules and agreements that different countries follow to manage global issues, including disaster management. These laws aren't enforced like national laws but guide countries to work together during emergencies. They help countries share resources, knowledge, and strategies for preventing and managing disasters. Some well-known examples include the Geneva Conventions, which ensure humane treatment during conflicts and emergencies. The Rio Declaration promotes sustainable development while protecting the environment. These laws encourage international cooperation in building early warning systems and planning for disaster risk reduction. Countries may not be forced to follow them, but doing so improves global coordination. Overall, international law plays a key role in helping the world respond to disasters more effectively and fairly.

Examples of international laws and guidelines:

- Geneva Conventions – Humanitarian treatment during crises and conflicts
- Rio Declaration (1992) – Sustainable development and environmental protection
- UN Sendai Framework (2015–2030) – Global strategy for disaster risk reduction
- Hyogo Framework for Action (2005–2015) – Strengthening resilience to disasters

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IN 2. National Legal Provisions in India

India has several national laws that directly or indirectly support disaster management and environmental protection. These laws are passed by the Parliament and are legally binding across the country. The Water Act of 1974 helps control and prevent water pollution, while the Forest Conservation Act of 1980 protects forests from being destroyed. The Biological Diversity Act of 2002 aims to preserve India's rich biodiversity, and the Wetlands Act of 2010 protects water bodies like lakes and marshes. Similarly, the Coastal Regulation Zone Act of 2011 is meant to prevent unplanned construction along coastlines, which can worsen the impact of disasters. The Indian Penal Code also includes sections that can punish those who create dangerous situations, like negligence during industrial accidents. These laws together ensure that development does not ignore environmental and safety concerns. They also help the government plan better for natural and man-made disasters.

Key Acts Supporting Disaster Management:

- The Water (Prevention and Control of Pollution) Act, 1974
- The Forest (Conservation) Act, 1980
- The Biological Diversity Act, 2002

- The Wetlands (Conservation and Management) Rules, 2010
- The Coastal Regulation Zone (CRZ) Notification, 2011
- The Environment Protection Act, 1986
- The Wildlife Protection Act, 1972
- The Air (Prevention and Control of Pollution) Act, 1981
- The Indian Penal Code (IPC) – Relevant Sections for Public Safety

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## 📜 3. Constitutional Provisions

India's Constitution includes several articles that support disaster management and environmental care. Article 21 guarantees the right to life, which courts have interpreted to include the right to a clean and safe environment. Article 48A directs the government to protect and improve the environment, including forests and wildlife. Article 51A(g) makes it the duty of every citizen to protect and improve the natural environment. These provisions show that environmental safety is not only a government responsibility but also a duty of every individual. They give legal strength to any policy or law made for disaster preparedness. Courts often refer to these articles while giving decisions related to environmental protection. These provisions form the backbone of India's legal approach to disaster risk reduction. In short, the Constitution promotes both the rights and responsibilities linked to disaster safety.

Important Constitutional Articles:

- Article 21 – Right to life (includes safe and clean environment)
- Article 48A – Duty of the State to protect the environment
- Article 51A(g) – Fundamental duty of citizens to safeguard nature

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### ⚖️ 4. Common Law

Common law is based on past decisions made by judges in courts and not on written laws passed by legislatures. In disaster-related cases, common law allows people to seek justice if they suffer harm due to someone else's actions. For example, if a company pollutes a river and this leads to flooding, affected people can sue the company even if no specific law exists. Common law includes tort law, which deals with acts that cause harm or loss to others. It also includes the law of nuisance, where legal action can be taken if someone's action interferes with public health or safety. This makes common law useful in situations where written laws don't yet cover new or emerging threats. It helps fill gaps in legislation by offering legal remedies. Common law gives flexibility to the legal system and ensures that disaster victims can still seek help.

Key Common Law Concepts in Disaster Context:

- Law of Tort – Legal action for harm caused (e.g., negligence, damage)
- Law of Nuisance – Legal action for disturbance to public or private safety
- Strict and Absolute Liability – Company liable for hazardous activity even without negligence

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### 📘 5. Statutory Law

Statutory law includes laws that are written and passed by government bodies, such as Parliament or state legislatures. These laws clearly define rules and responsibilities for disaster preparedness, response, and recovery. For example, the Hyogo Framework for Action (2005–2015) was a global plan that influenced

India’s disaster laws and policies. It encouraged countries to create detailed plans and invest in early warning systems and risk assessments. Many of India’s environmental and disaster-related laws are statutory in nature, meaning they are officially written and enforced. These laws are reviewed and updated based on new risks, such as climate change or urban flooding. Statutory law gives authority to agencies like the National Disaster Management Authority (NDMA) to take action. This makes statutory law the most formal and structured part of the legal system for disaster management.

Examples of Statutory Disaster Laws and Frameworks:

- Disaster Management Act, 2005
- Factories Act, 1948 (industrial safety)
- Environment Protection Act, 1986
- Public Liability Insurance Act, 1991 (for hazardous industries)
- Hyogo Framework for Action (2005–2015)
- Sendai Framework for Disaster Risk Reduction (2015–2030)

**UNIT 4:-Coping Strategies; alternative adjustment processes**

**Changing Concepts of disaster management –**

**Industrial Safety Plan;**

**Safety norms and survival kits –**

**Mass media and disaster management**

Sure! Here's the same explanation, with **each paragraph expanded to 6–7 simple sentences**, keeping everything in the context of **disaster management**. The content is clear, elaborated, and easy to understand:

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**Coping as the Ability to Respond and Recover**
Coping means the ability of people and communities to respond to and recover from something difficult, like a natural disaster. It includes physical actions like moving to a safer place and emotional strength like staying calm. Coping is about what people do with the resources they have to survive and bounce back after a problem. It also means adjusting to the changes brought by the disaster. For example, after a flood, people might repair their homes or change their farming practices. In disaster management, coping helps reduce damage and loss. Strong coping skills can save lives and speed up recovery.

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**Coping Strategies Passed from Generation to Generation**
In many places, people pass down disaster-related knowledge from one generation to the next. These traditional coping strategies are based on experience and are shared within families and communities. For example, coastal villagers may know when a storm is coming just by watching the sea and sky. These strategies often involve habits, practices, and techniques that have worked well in the past. Because disasters like floods or droughts happen repeatedly, people use past events to prepare for the future. These inherited methods help people act quickly and correctly when danger strikes. They also build a sense of trust and unity in the community.

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**Coping Strategies Are Not Fixed or Unchanging**
Coping methods are not always the same forever. As people's lives, environments, and societies change, their coping strategies also change. A community that once depended on farming may move to city jobs and change its way of dealing with disaster. New challenges like climate change, urbanization, and technology may force people to adapt their methods. For example, people might use mobile phones now to receive weather warnings instead of depending on traditional signs. Coping strategies grow and improve over time to match the changing world. Disaster managers need to understand that flexibility is important in making coping plans work well.

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**External Influences Can Weaken Traditional Coping Systems**
Sometimes, when outside help comes in large amounts, it can make people stop using their local coping methods. This may happen without anyone meaning harm—it just shifts people's focus away from their own strengths. If people start waiting for government aid or food packages after every flood, they may forget how to store their own emergency supplies. This leads to loss of self-reliance and long-term dependency. External organizations must support, not replace, the knowledge and strength of local communities. Traditional systems often work well and should be protected. Disaster planning should combine both external aid and local wisdom.

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**Coping Is About Managing Resources During Difficult Times**
Coping means using whatever resources people have, even if they are limited, in smart ways during tough times. This includes food, water, shelter, tools, and even emotional support. In disasters, communities may have to stretch what they have to last longer than usual. For example, a family may divide food carefully or share water with neighbors. Even with very little, good coping helps reduce suffering. People use their creativity, teamwork, and problem-solving skills to survive. Managing resources wisely is a key part of community-based disaster management.

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**Coping Strategies Are Built on Local Experience and Capacity**
People create coping methods based on their surroundings, past events, and available resources. These methods are closely tied to the environment they live in. For instance, people in dry regions know how to save and store water, while mountain communities prepare for landslides. Every place has its own risks and strengths, so coping strategies must be designed to fit them. These strategies use the combined capacity of people—what they know, what they can do, and how well they work together. Disaster managers must listen to local people to understand their coping strategies. Including local knowledge makes disaster plans more effective and acceptable.

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**Coping Involves Several Steps and Actions**
Coping is not just one step but a series of actions taken before, during, and after a disaster. These actions are called coping mechanisms and they support survival and recovery. People prepare ahead of time, try to reduce harm when the disaster happens, and work to rebuild afterward. For example, families may store clean water in advance (preparedness), move to safer ground during a flood (response), and rebuild houses after the floodwaters go down (recovery). These steps can also include helping neighbors and working with local leaders. Good coping depends on strong planning and coordination. Disaster managers should encourage communities to practice all these steps.

✔ **Main coping mechanisms:**

- **Preparedness** – readying food, water, and shelter
- **Mitigation** – reducing future risks (like planting trees or using flood-resistant materials)
- **Response** – acting quickly during the disaster
- **Recovery** – repairing and rebuilding life after the event

**Pressures That Weaken Coping Strategies Over Time**
Over the years, many pressures have reduced the strength of coping strategies that once worked well. These include changes in family structures, urban migration, population growth, and even market influence. For example, when young people move away for work, older family members may be left without support during disasters. Also, changes in farming methods may make old coping techniques less useful. Some pressures come from outside forces like globalization, where communities rely more on markets and less on self-sufficiency. As these changes increase, coping strategies may no longer be enough to deal with disasters. Disaster managers must recognize these pressures and adjust plans accordingly.

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**Weakened Traditional Coping Increases Risk**
When traditional coping skills are lost, people may not know how to react during disasters. They become more vulnerable and may suffer more damage or take longer to recover. This happens when communities forget past lessons or depend too much on outside help. Weak coping increases risks like loss of life, property damage, and emotional stress. In disaster management, it is important to strengthen both new and old coping systems. This means educating people, supporting community efforts, and protecting cultural knowledge. Strong coping leads to safer, stronger communities.

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# alternative adjustment processes

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**What are Alternative Adjustment Processes?**
Alternative adjustment processes mean the new ways that people and communities change how they live or work to handle disasters. When their old ways of coping (or dealing) with disasters stop working well, they find new methods to stay safe and recover. These new ways can be different from what their parents or grandparents used before. They come from what people learn from experience or from help they get from outside sources, like government or groups. These changes help people survive when things are not the same as before.

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**Why do people need these alternative processes?**
The world is always changing. Sometimes, disasters happen more often or become stronger, and old ways of coping don’t help as much anymore. For example, if farming becomes hard because of less rain or bad soil, farmers need to find new jobs or new ways to grow food. Or if floods happen more often, people might need to move to safer places. These new ways help people live better and safer in changing conditions.

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**Examples of Alternative Adjustment Processes**

- **Moving to safer places:** If a village floods every year, some families might move to a town nearby that doesn’t flood as much.

- **Changing jobs:** When farming is difficult, people might start small shops, make crafts, or work as helpers in cities.
- **Using technology:** People might start using mobile phones to get weather warnings, or solar lamps when electricity is not reliable.
- **Working together:** Communities might form groups to help each other during disasters, like sharing food or building shelters.
- **Saving resources in different ways:** People might keep water in many containers or have different jobs to earn money so they are not stuck if one source fails.
- **Learning about health:** After floods or disasters, people learn new ways to stay clean and healthy to avoid sickness.

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**How do people learn these new ways?**
People learn alternative adjustment processes from their own experiences and from outside help. Sometimes, government or charity groups teach communities how to prepare better for disasters. Schools may teach children what to do in emergencies. People also share their experiences with neighbors and friends. Watching TV, listening to the radio, or using the internet helps people know about new ideas and tools.

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**What problems can happen when adopting new ways?**
Some people find it hard to accept new methods because they are used to old ways or do not trust new ideas. Sometimes, people don't have enough money to change their jobs or buy new tools. Remote areas might not get enough support or information. Also, some new methods may not fit well with local culture or traditions. It is important that leaders and helpers listen to communities and help them in ways that make sense to them.

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**Why are alternative adjustment processes important?**
These new ways help people survive and live better when disasters become different or worse. They help communities be stronger and less dependent on help from outside. When people learn and change, they reduce the damage caused by disasters. Alternative adjustment processes are part of disaster management because they prepare communities for the future and help them recover faster.

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Let me know if you want me to add examples from a particular disaster or place!

# Changing Concepts of Disaster Management

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**At First, Disaster Management Was Only About Helping After Disasters**
In the beginning, people only helped after disasters like floods or earthquakes happened. They focused on saving lives and giving food or medicine. They did not do much to stop disasters or get

ready before they came. This way is called “response.” But waiting until after the disaster made things worse. People later understood this is not enough to keep everyone safe.

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**Later, People Started Preparing Before Disasters**
After some time, people learned it is better to get ready before disasters happen. They started to build safer houses and make warning systems. They also taught people what to do if a disaster comes. Having emergency plans and supplies ready can save many lives. This new way helps a lot more than only helping after disasters.

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**Disaster Management Now Has Many Parts**
Now, disaster management includes many steps:

- **Prevention:** Trying to stop disasters or make them less harmful, like building walls to stop floods.
- **Preparedness:** Getting ready with plans and supplies.
- **Mitigation:** Making things stronger, like safer buildings.
- **Response:** Helping people during and just after disasters.
- **Recovery:** Fixing homes and communities after disasters.

All these parts work together to keep people safer.

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**Local People Are Involved in Disaster Plans**
Today, local people help make disaster plans because they know their area best. When they join, the plans work better. They can warn others and help during disasters. Working together with the community makes disaster management stronger and more useful.

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**Technology Helps a Lot in Disaster Management**
Technology like weather forecasts and phone alerts warn people early about disasters. Satellites and sensors help predict disasters better. Social media shares information fast. Rescue teams also use technology to find and help people quickly. This saves many lives and helps manage disasters better.

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**Disaster Management Looks at Bigger Problems Too**
Now, disaster management knows that poverty and weak buildings make disasters worse. It works with health, education, and building programs to help communities become stronger. When communities are stronger, they can handle disasters better. This helps reduce damage and loss over time.

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This simple explanation shows how disaster management ideas have changed from only helping after disasters to preparing before, using technology, involving people, and making communities stronger. Let me know if you want me to explain any part more!

# Industrial Safety Plan

Sure! Below is the **combined and detailed explanation** of the **Concept of Industrial Safety Plan**, including the **Purpose**, **Components**, and **Goals**, with each bullet explained in **4–5 easy-to-understand sentences**:

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### ✅ Concept of Industrial Safety Plan

An **Industrial Safety Plan** is a well-organized approach used in industries to **prevent**, **respond to**, and **recover from** accidents and emergencies. It plays a vital role in **protecting the lives of workers**, **safeguarding equipment and buildings**, and **ensuring quick recovery** after any disaster. This plan includes procedures, safety rules, and emergency steps to handle events like fires, chemical leaks, machinery failures, and natural disasters. A strong safety plan ensures a safe working environment and also helps industries meet legal and environmental standards.

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### 🔹 1. Purpose of an Industrial Safety Plan

- **To prevent industrial accidents and disasters (e.g., chemical leaks, fires, mechanical failures)**
  The main goal is to avoid accidents before they happen. It includes spotting dangers and fixing them early. Preventing disasters saves lives and reduces damage. It also keeps work going without interruptions.
- **To ensure the safety of employees, the surrounding community, and the environment**
  A safety plan protects not just workers but also people living nearby and the environment. For example, a chemical spill can harm rivers and communities. Safety steps like barriers and warning systems help reduce harm. This builds trust and shows responsibility.
- **To respond effectively in case of emergencies such as earthquakes, fires, or toxic releases**
  Some events can't be avoided, so response plans are needed. These plans include evacuation, first aid, and rescue steps. A fast and organized response can save lives. It also helps control damage quickly.

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### 🔹 2. Components of an Industrial Safety Plan

**1. Hazard Identification & Risk Assessment**

- **Identifying possible hazards (chemical, mechanical, biological, etc.)**
  This step finds all the dangers in a workplace. Hazards include toxic chemicals, sharp machines, or harmful noise. Recognizing them early helps plan safety actions. It’s the first step in preventing accidents.
- **Evaluating the risks they pose in specific scenarios**
  After finding hazards, the next step is to understand how serious they are. This includes thinking about when and how they might happen. It helps decide which risks need urgent attention. This makes the safety plan more focused and effective.

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**2. Emergency Preparedness**

- **Clear procedures for evacuation, rescue, communication, and medical response**
  Everyone should know what to do during a disaster. This includes how to leave safely, rescue others, and get medical help. Having these steps written down avoids confusion. It saves time and lives.
- **Identification of assembly points and emergency control centers**
  Assembly points are safe places for workers to gather. Emergency control centers manage the situation and make decisions. These places must be easy to find and well-equipped. They are key to handling emergencies calmly.

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**3. Preventive Safety Measures**

- **Usage of Personal Protective Equipment (PPE): helmets, gloves, shoes, ear muffs, etc.**
  PPE helps protect workers from injury during risky work. Helmets protect the head, gloves protect hands, and ear muffs protect hearing. Everyone must wear the right gear for their job. It's a simple but effective safety step.
- **Regular maintenance and inspection of machinery**
  Machines should be checked often to catch problems early. Faulty machines can cause serious accidents. Regular inspection keeps machines safe and working well. It also prevents sudden breakdowns.
- **Health checkups every 3 months; maintaining a health register**
  Workers must get regular medical tests to stay healthy. This helps find early signs of illness caused by their work. A health register keeps records of these checkups. It ensures long-term safety.

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**4. Communication & Alarms**

- **Alarm systems to alert workers**
  Alarms warn workers about danger like fires or gas leaks. They should be loud and clear for everyone to hear. Workers must be trained to react quickly when alarms go off. Testing alarms regularly is important.
- **Communication plans with internal teams and external emergency services**
  Clear communication is critical during emergencies. Teams inside the company must talk with each other and with outside help like fire stations. Fast communication reduces confusion. It helps manage the emergency better.

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**5. Training & Drills**

- **Conducting mock drills and training sessions regularly**
  Workers need to practice how to respond during emergencies. Mock drills help them

remember what to do and where to go. These drills should be repeated often for better understanding. Practice makes real situations easier to handle.

- **Rehearsal of emergency procedures for all personnel**
  Everyone should know their roles in a disaster. Rehearsals help test the safety plan and improve it. They also show if any changes are needed. It ensures all workers act quickly and safely during real emergencies.

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**6. Emergency Control Team**

- **Delegating responsibilities to specific individuals**
  A safety team should be formed with clear duties for each person. For example, one person sounds the alarm while another contacts emergency services. This avoids confusion during a crisis. Roles must be assigned and practiced.
- **Clear designation of roles like emergency declarer, first responders, rescue coordinators, etc.**
  Specific job titles help during panic situations. A declarer can officially call an emergency, and rescue coordinators can manage evacuations. Everyone should know who is in charge. This makes the response more organized and effective.

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**7. Post-Incident Procedures**

- **Damage assessment and reporting**
  After a disaster, it's important to check what was damaged. This helps plan repairs and future improvements. Reports also help track costs and safety failures. They are useful for insurance and legal processes.
- **Providing medical aid and psychological support**
  Injured workers need fast medical help. Some people may also need counseling after a serious event. Providing this support shows care and builds morale. It helps employees recover faster.
- **Rehabilitation and restarting operations safely**
  Once the area is safe, work should begin slowly and carefully. Repairs and safety checks should be done first. Workers should be informed and trained again if needed. This ensures no further risks.

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**8. Coordination with External Agencies**

- **Interaction with fire services, hospitals, police, and mutual aid groups**
  Outside help is important during big emergencies. Firefighters, doctors, and police can handle things the company can't. Companies should build strong ties with them before anything happens. This helps get fast support when needed.

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- **3. Goals of an Industrial Safety Plan**

- **Minimize human injury and loss of life**
  The most important goal is to keep people safe. By removing risks and acting quickly, injuries and deaths can be avoided. Workers feel more confident in a safe environment. Safety first means fewer accidents.
- **Protect industrial assets and infrastructure**
  Machines, tools, and buildings are expensive and important. Safety plans help protect them from damage during disasters. This saves repair costs and downtime. It also keeps production going smoothly.
- **Ensure rapid recovery and continuity of operations**
  After an emergency, it's important to return to normal quickly. A strong plan includes steps to restart work safely. Fast recovery helps reduce losses. It also keeps the business running and workers employed.
- **Comply with legal and environmental regulations**
  Industries must follow safety laws and environmental rules. A safety plan ensures all legal steps are followed. This avoids fines and legal trouble. It also shows that the company cares about people and the planet.

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# Safety Norms and Survival Kits:

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### 🔹 Definition of Safety Norms:

**Safety norms** are the set of rules, guidelines, and practices that are followed in workplaces, especially in industries, to keep workers safe and prevent accidents. These norms are designed to reduce the chances of injuries, protect equipment, and make sure everyone knows what to do during dangerous situations. They include using safety gear, maintaining machines, doing regular health checkups, and practicing emergency drills. Safety norms are very important for creating a safe and healthy work environment. They help workers stay protected from hazards like fire, chemicals, heavy machinery, and loud noise.

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### 🔹 Safety Norms

- **Use of Personal Protective Equipment (PPE):**
  Workers must wear safety gear while working. This includes things like safety shoes to protect feet, helmets to protect the head, gloves to protect hands, ear covers to reduce loud noise, and shields for face and eyes while welding. These items keep workers safe from injuries. Everyone should wear the right equipment for their job.
- **Health and Medical Safety:**
  Every worker should get a health check-up at least once every three months. This helps to find out if their job is affecting their health. The company should keep a record of these health checkups in a health book. This way, any illness or problem can be treated early.
- **Emergency Planning and Procedures:**
  The industry should be ready to act in case of a big accident, like a fire or gas leak. They must

plan what to do — like how to warn people, where everyone should gather, and how to call for help. There should be emergency centers and safe meeting points. Practice drills should be done so everyone knows what to do.

- **Maintenance and Machinery Checks:**
  Machines and tools should be checked often to make sure they are working properly. If machines are broken or unsafe, they should be fixed right away. This stops accidents from happening. Keeping machines in good condition keeps workers safe.
- **Training and Awareness:**
  All workers should be taught how to work safely. They should know how to use machines, how to wear safety gear, and what to do in an emergency. Safety rules should be shown through posters and signs. Regular practice and training help everyone stay ready.

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🔹 **Definition of Survival Kit:**

A **survival kit** is a collection of important items that can help a person survive during a disaster or emergency. It includes food, water, shelter materials, first aid, and tools. The survival kit is packed and kept ready so that it can be used when people have to leave their homes or workplaces quickly or when help may take time to arrive. The goal of a survival kit is to make sure a person or family can live safely for at least 2–3 days during an emergency. It is one of the best ways to be prepared for earthquakes, floods, fires, or other disasters.

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🔹 **Survival Kit**

- **Water and Water Purification Tools:**
  You need clean water to drink. Pack some water bottles and also water-cleaning tablets or a special water filter (like a LifeStraw). This helps if you don't have clean water nearby.
- **Shelter and Warmth:**
  Pack things that can keep you dry and warm, like plastic sheets, a small tent, a raincoat, and warm clothes. These will help protect you from cold, wind, or rain. You may need to stay outside for some time.
- **Food and Nutrition:**
  Keep food that does not spoil quickly. Pack snacks like biscuits, canned food, or energy bars. This food will help you stay strong when regular food is not available.
- **First Aid Kit:**
  You need a small box with basic medical items like bandages, pain relievers, and antiseptic. Also, add your personal medicines if you take any. This kit will help treat small injuries.
- **Light and Communication:**
  Take a flashlight or torch with extra batteries. Also, keep a whistle to call for help if needed. A map and compass can help you find your way if phones are not working.
- **Fire and Tools:**
  Carry a lighter or matchbox to make a fire for warmth or cooking. Take cotton balls or paper to help light a fire. A fire can also keep animals away at night.

- **Important Documents:**
  Put copies of your ID, emergency phone numbers, and important papers in a waterproof bag. This helps if your home or things are damaged. You can show who you are and get help faster.
- **Other Items:**
  You may also need a small tool kit, knife, gloves, or a fire extinguisher. Don't forget things like tissues or soap for staying clean. These small items make life easier during a disaster.

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# Mass Media and Disaster Management,

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### ✅ Mass Media and Disaster Management – Detailed Explanation

#### 🔹 What is Mass Media?

**Mass media** includes tools and platforms used to communicate information to a large audience. This includes:

- **Television (TV)**
- **Radio**
- **Newspapers and Magazines**
- **Internet platforms** (websites, online news)
- **Social media** (like Facebook, Twitter, Instagram, YouTube, WhatsApp)

Mass media spreads information quickly to millions of people at once. Because of this power, it becomes extremely important in **disaster management** — which is the process of preparing for, responding to, and recovering from natural or man-made disasters (like earthquakes, floods, cyclones, industrial accidents, etc.).

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#### 🔹 Role of Mass Media in Disaster Management

Mass media plays a vital role at **all stages of disaster management**: **before**, **during**, and **after** the disaster. Let's understand each in detail:

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### ✅ 1. Before a Disaster – Awareness and Preparedness

Mass media helps in **educating and preparing** people for possible disasters.

- It gives **weather forecasts and early warnings** for events like cyclones, floods, or heavy rainfall. For example, a news channel may warn people about an incoming storm and suggest safety measures.
- It **teaches safety tips** — like how to prepare a survival kit, how to evacuate safely, or how to protect important documents.

- It helps **spread government alerts and emergency numbers** quickly and widely.
- It creates **awareness campaigns** — showing real stories, past disasters, and the importance of being ready. For example, educational programs on National Disaster Management Day.

  **Result:** People stay alert, make emergency plans, and reduce the risk of serious loss or injury.

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✅ **2. During a Disaster – Real-Time Information and Rescue Support**

When a disaster strikes, mass media becomes a **lifeline** of real-time communication.

- It gives **live coverage and updates** from the affected areas through TV or online platforms.
- **Radio and TV** can be used to **issue urgent instructions** like "move to higher ground," "evacuate immediately," or "stay indoors."
- Media also **shares the location of rescue camps, shelters, and food supplies**.
- It **connects people with emergency services**, NGOs, hospitals, and relief workers.
- Social media helps victims to **communicate their location and condition**, and it also helps family members find each other.

  **Result:** Lives are saved through faster rescue, better communication, and shared public support.

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✅ **3. After a Disaster – Relief, Recovery, and Rebuilding**

Once the immediate danger has passed, mass media continues to support the recovery process.

- It **broadcasts appeals for donations** of food, clothes, money, and medicines.
- It shows **images and stories of affected people**, encouraging more public and international help.
- It **monitors relief efforts** and keeps the public informed about whether the government and aid groups are doing their job properly.
- It can **pressure authorities** to act faster or fix mistakes.
- It helps in **community healing** by sharing positive stories of survival, support, and rebuilding.

  **Result:** Relief reaches people faster, more aid is collected, and the community begins to rebuild with better morale.

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🔹 **How Media Helps Different Groups in a Disaster**

| Group | How Mass Media Helps Them |
|---|---|
| General Public | Provides warnings, safety tips, and rescue information |

| Group | How Mass Media Helps Them |
|---|---|
| Victims | Helps them share their situation, receive aid |
| Government | Spreads official announcements, tracks relief efforts |
| Rescue Teams/NGOs | Helps them reach the right place quickly |
| Donors & Volunteers | Encourages them to help and informs them where help is needed |

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### 🔹 Types of Mass Media Used in Disaster Management

1. **Print Media** – Newspapers and magazines report news and updates and give safety instructions.
2. **Electronic Media** – TV and radio are useful for real-time updates and public announcements.
3. **Social Media** – Platforms like Facebook, Twitter, WhatsApp, and YouTube spread messages instantly and widely. They also help locate missing persons or raise funds.
4. **Radio Communication** – FM/AM radio works even when the internet or electricity fails. Very useful in rural or disaster-hit areas.

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### 🔹 Strengths of Mass Media in Disaster Management

- Reaches remote areas and large populations very fast.
- Provides real-time, visual, and audio updates.
- Works as a **bridge between disaster victims and the outside world**.
- Encourages public participation and donations.
- Can influence **government action** and speed up decision-making.

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### 🔹 Challenges in Using Mass Media

- False or unverified information can create **panic** or confusion.
- Overuse of **graphic images** can increase trauma for victims.
- If communication lines are down (power failure, internet loss), media channels may stop working.
- Some rural areas may not have access to all types of media.

  **Solution:** Media should work **responsibly**, **verify news**, and focus on **positive actions** during disasters.

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### 🔹 Conclusion

Mass media is not just about news during disasters — it is a **powerful tool for saving lives, guiding people, and helping rebuild communities**. Whether it's alerting people about an incoming cyclone, showing how to make a survival kit, or reporting the needs of disaster-hit families, media plays a key role at every step.

When used properly, mass media can **reduce fear, improve response, and bring hope to people during the darkest times**.

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Would you like me to turn this into a poster, infographic, or study handout for your project or exam?

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**Planning for dm- Strategies for disaster management planning –**

**Steps for formulating a disaster risk reduction plan –**

**Disaster management Act and Policy in India –**

**Organizational structure for disaster management in India**

**Preparation of state and district disaster management plans**

Disaster management planning means making a clear plan to deal with disasters like floods, earthquakes, fires, or accidents. It includes steps to **prepare before a disaster happens**, **take action during the disaster**, and **help people recover after it's over**. The goal is to **save lives, reduce damage**, and **help communities get back to normal quickly**. It also involves **training people**, **using technology**, and **working together with the government, local groups, and the public**.

# strategy for disaster management planning

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**1. Monitoring and Mapping of Hazards**

Monitoring and mapping hazards means keeping an eye on natural threats like floods, earthquakes, or cyclones and identifying where they are likely to happen. This helps people and governments know which areas are in danger so they can take early action. Tools like GIS (Geographic Information Systems) and remote sensing help create maps that show where disasters might strike. With this information, emergency plans can be made in advance. Mapping is important for quick response and better planning. It also helps in building safe structures in less risky places.

**Tools:**

- GIS and Remote Sensing
- Seismographs
- Tsunami gauges

**Examples:**

- Mapping flood-prone zones using topographic maps
- Using tsunami gauges to monitor sea level changes
- Identifying earthquake zones with seismic activity sensors

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**2. Risk and Vulnerability Assessment**

Risk and vulnerability assessment is the process of finding out which people or areas are more likely to be harmed by a disaster. It looks at factors like weak buildings, lack of awareness, and poor planning. Knowing these risks helps in making better plans to protect those who are most exposed. This step also highlights areas that need stronger safety measures. It supports decision-making on where to spend money and resources for disaster protection. This strategy makes disaster response faster and more focused.

**Tools:**

- Community surveys
- Structural analysis tools
- Vulnerability indexes

**Examples:**

- Identifying poorly built houses in flood zones
- Studying areas where people have less access to emergency services
- Assessing schools in earthquake zones for structural strength

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**3. Prediction and Forecasting**

Prediction and forecasting are about warning people before a disaster happens. Scientists use technology and research to guess when and where a disaster might occur. This gives people time to prepare, move to safer places, or take other actions. Accurate forecasts save lives and reduce damage. Forecasting is used for natural events like cyclones, earthquakes, and floods. Some signs are also taken from nature, like changes in animal behavior.

**Tools:**

- Weather satellites and radars
- Seismographs and earthquake prediction tools
- Tsunami warning systems

**Examples:**

- Using satellite data to forecast cyclones
- Predicting earthquakes with dilatancy theory
- Observing unusual animal behavior before disasters

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**4. Preparation of Building Guidelines**

Building guidelines are rules to make sure that new houses and buildings are strong and safe during disasters. These rules tell builders what materials to use and how to design structures to resist earthquakes, floods, or fires. Engineers, architects, and local authorities work together to set these codes. If followed, these rules reduce damage and save lives during disasters. They also make

buildings last longer and safer for everyday use. These guidelines are especially important in high-risk areas.

**Tools:**

- National and local building codes
- Earthquake-resistant design standards
- Fire safety and flood-resistant construction manuals

**Examples:**

- Building homes above flood levels
- Using fireproof materials in high-risk fire zones
- Adding extra support to buildings in earthquake zones

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**5. Retrofitting and Strengthening of Existing Structures**

Retrofitting means making changes to old buildings or infrastructure so they can handle disasters better. Many old structures were built before safety rules were made, so they may be weak. Strengthening them can prevent buildings from collapsing and protect lives. This is a cost-effective way to make communities safer without needing to rebuild everything. Changes can include adding stronger walls, raising buildings, or using fireproof materials. Retrofitting also helps protect public services like hospitals and schools.

**Tools:**

- Seismic retrofitting techniques (e.g., shear walls, column jacketing)
- Structural assessment software
- Waterproofing and fireproofing materials

**Examples:**

- Raising the base (plinth) of houses in flood zones
- Adding steel jackets to support old concrete columns
- Reinforcing bridges to withstand earthquakes

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Would you like this compiled into a printable PDF or PowerPoint slide format as well?

# \ Steps for Formulating a Disaster Risk Reduction (DRR) Plan

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**1. Hazard Monitoring and Mapping**

The first step is to identify the types of disasters that can happen in a particular area and map them accurately. This means keeping track of natural events like floods, earthquakes, or cyclones using scientific tools. Mapping helps in understanding which places are at higher risk and helps prepare in advance. Accurate data is important for making strong decisions. These maps are also useful during evacuation or rescue operations.

**Tools:**

- GIS (Geographic Information Systems)
- Remote Sensing
- Seismographs and tsunami gauges

**Examples:**

- Mapping earthquake-prone zones using seismic data
- Identifying low-lying flood-prone villages through satellite images

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**2. Risk and Vulnerability Assessment**

This step focuses on identifying which people, buildings, or areas are more likely to be affected badly by disasters. Vulnerability depends on how strong the buildings are, how aware the people are, and how ready the system is to face a disaster. Communities with weak infrastructure or poor communication systems are more at risk. Knowing this helps in preparing special support for such areas. It also allows officials to make better plans and use resources more wisely.

**Tools:**

- Community vulnerability surveys
- Risk assessment tools and indexes

**Examples:**

- Finding out which schools lack safe exits
- Identifying old buildings that may collapse during an earthquake

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**3. Prediction and Early Warning**

After understanding the risks, the next step is to set up systems that can predict disasters and warn people early. This gives people time to take action like evacuating or securing their homes. Modern technology helps predict cyclones, earthquakes, and tsunamis well in advance. Warning systems must reach everyone, including remote villages. This step is vital for saving lives.

**Tools:**

- Weather satellites and Doppler radars
- Earthquake sensors and tsunami buoys

- Mobile alert systems and sirens

**Examples:**

- Sending cyclone warnings via SMS
- Using loudspeakers in villages to alert people of floods

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**4. Planning and Implementation of Preventive Measures**

This step includes creating clear plans and actions that reduce the impact of disasters. This may include building strong houses, setting up safe shelters, and making sure hospitals and schools are protected. These actions should be included in the regular development plans of cities and villages. The government and communities must work together to carry out these measures. Proper planning can reduce damage and recovery time.

**Tools:**

- Building codes
- Community-based disaster preparedness plans
- Local development plans with DRR components

**Examples:**

- Constructing cyclone shelters in coastal areas
- Training community volunteers for first aid and rescue

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**5. Capacity Building and Training**

This step is about educating people and training them so they know what to do before, during, and after a disaster. Schools, local leaders, and emergency workers should all be part of this training. People need to learn evacuation routes, first aid, and basic safety tips. When people are trained, they panic less and act quickly in emergencies. This step makes the whole community stronger and safer.

**Tools:**

- Training manuals and emergency drills
- Public awareness campaigns and school programs

**Examples:**

- Conducting mock drills in schools and offices
- Organizing workshops for village leaders and volunteers

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**6. Review, Update, and Improve the Plan**

Finally, the DRR plan should not be a one-time effort. It should be reviewed regularly to see what worked well and what needs improvement. After a disaster, officials and communities should meet

to discuss lessons learned. The plan should be updated with new information, better tools, and feedback from past experiences. This keeps the plan useful and relevant. It also helps in building long-term resilience.

**Tools:**

- Disaster assessment reports
- Feedback forms from communities and officials

**Examples:**

- Updating flood maps after heavy rainfall
- Changing evacuation plans based on traffic issues during past emergencies

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# Disaster management Act and Policy in India

Sure! Here's a simple explanation in paragraph format for each key topic related to the Disaster Management Act and Policy in India:

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**1. Disaster Management Act, 2005**

The Disaster Management Act was passed by the Indian Parliament in 2005 and came into effect in 2006. Its main goal is to create a system for handling disasters effectively and to reduce the damage caused by them. This law provides rules for planning, response, and recovery from both natural and man-made disasters. It ensures that the government at all levels—national, state, and district—works in a coordinated way during disasters. The Act contains 79 sections spread over 11 chapters.

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**2. National Disaster Management Authority (NDMA)**

NDMA is the top organization in India for disaster management, and the Prime Minister is its head. It makes policies, plans, and gives guidelines on how to deal with disasters. NDMA ensures that all government departments are prepared to respond quickly and efficiently. It also forms expert committees to give advice and help improve disaster preparedness across the country.

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**3. National Executive Committee (NEC)**

NEC helps the NDMA by coordinating disaster-related work between different departments of the central government. It includes secretaries from key ministries like health, agriculture, defense, and more. NEC prepares the National Disaster Management Plan and supports state governments by providing technical help and ensuring that national disaster guidelines are followed.

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**4. State Disaster Management Authority (SDMA)**

Each state in India has its own SDMA, headed by the Chief Minister. The SDMA plans for state-level disaster management and ensures that all state departments are ready to deal with emergencies. It prepares the State Disaster Management Plan which includes actions for preventing and reducing disaster effects and improving readiness.

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**5. District Disaster Management Authority (DDMA)**

At the district level, the DDMA is led by the District Collector or Magistrate. This authority takes care of local disaster management. It prepares for emergencies, organizes rescue and relief work, and makes sure people get food, shelter, and medical help. DDMA can also order the use of local resources and coordinate with other departments during disasters.

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**6. National Disaster Management Plan (NDMP)**

The NDMP is a plan that covers the whole country. It lists the steps to be taken before, during, and after a disaster. It includes how to reduce risks, prepare for disasters, and build capacity to respond. Ministries and departments are required to follow the NDMP and create their own plans based on it. It also ensures proper funding for disaster-related work.

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**7. Relief Measures and Funds**

The Act ensures that people affected by disasters receive help in the form of food, water, shelter, medical care, and sanitation. There are special rules to help widows, orphans, and others in need. Financial aid is given for lost lives, damaged homes, and livelihoods. Special funds like the National Disaster Response Fund and Mitigation Fund are set up to support these activities.

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**8. National Disaster Response Force (NDRF)**

NDRF is a team of specially trained personnel who respond to disasters like floods, earthquakes, and chemical spills. They have modern tools and training in rescue operations, first aid, and handling hazardous materials. The NDRF helps during emergencies and works with state governments. It also trains state police and fire services to handle disasters better.

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**9. Disaster Risk Reduction (DRR)**

DRR means reducing the damage caused by disasters by taking smart steps in advance. It includes understanding the risks, preparing people, and reducing weaknesses like poor

building designs or lack of awareness. DRR works alongside development goals to build safer and more resilient communities.

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**10. Prime Minister's 10-Point Agenda for DRR**

The Prime Minister suggested 10 ideas to make disaster management better. These include adding disaster planning in all development projects, supporting poor and women-led groups, using technology and social media, training local people, learning from past disasters, and improving global cooperation. These points aim to reduce disaster impacts and improve recovery.

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**11. Role of Central and State Governments**

The central government ensures that all ministries include disaster management in their projects. It provides money, training, and support to states. It also calls in the Army, Air Force, and Navy during large disasters. State governments prepare their own plans, create disaster response teams, and make sure local authorities are ready to act.

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**12. Use of GIS and Remote Sensing**

GIS (Geographic Information System) and remote sensing help monitor and map disasters. They use satellite images and data to detect where disasters might happen and how bad they are. This helps in planning rescue operations, moving people to safety, and restoring services like roads and power lines.

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**13. Role of Armed Forces**

The Army, Navy, and Air Force support civil authorities during big disasters. They help in rescue operations, providing food and medicine, and rebuilding damaged areas. For example, the Air Force may drop relief materials or rescue people from flooded or snow-covered regions.

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**14. Role of Panchayati Raj Institutions**

Local bodies like Gram Panchayats, Mandal Parishads, and Zilla Parishads help create awareness about disasters in villages. They work on sanitation, water supply, lighting, and transportation. During a disaster, they help organize relief camps, clear debris, and support local people with food, medicine, and shelter.

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**15. National Institute of Disaster Management (NIDM)**

NIDM is a national body that trains people, carries out research, and helps make disaster policies. It supports state governments by preparing training material and spreading awareness about disaster preparedness in schools, colleges, and among government officials.

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**16. United Nations and International Organizations**

Many international groups like **UNICEF**, **WHO**, **UNESCO**, and **UNEP** help in disaster management in India. They provide technical help, education, training, and emergency support for health, nutrition, and rebuilding efforts. They also help improve early warning systems and encourage sustainable development.

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# The **organizational structure for Disaster Management (DM) in India**

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**1. National Level:**

At the top, disaster management is handled by the **National Disaster Management Authority (NDMA)**. This authority is chaired by the **Prime Minister of India** and includes a Vice-Chairman and eight members. Each member is responsible for specific types of disasters and specific states or union territories. NDMA prepares guidelines, plans, and policies for managing disasters across the country. It also oversees **disaster-specific divisions** such as earthquakes, floods, cyclones, etc.

Supporting NDMA is the **National Executive Committee (NEC)**, which includes secretaries from various central ministries like health, agriculture, atomic energy, and others. NEC is responsible for preparing the **National Disaster Management Plan (NDMP)** and ensuring its implementation. It also helps coordinate between departments and states during emergencies.

Additionally, India has a **National Disaster Response Force (NDRF)**, which is a team of specially trained personnel equipped to respond to any major disaster. This force works under the supervision of NDMA and is deployed by the Central Government during emergencies.

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**2. State Level:**

Each Indian state has its own **State Disaster Management Authority (SDMA)**, chaired by the **Chief Minister**. The SDMA includes up to nine members, including a Vice-Chairperson. The

SDMA is responsible for creating and implementing the **State Disaster Management Plan (SDMP)**, which outlines how the state will prepare for and respond to disasters.

To support the SDMA, there is a **State Executive Committee**, which includes senior bureaucrats and is led by the Chief Secretary or an equivalent officer. This committee handles day-to-day operations, coordination, and execution of disaster management tasks.

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**3. District Level:**

At the district level, the **District Disaster Management Authority (DDMA)** is in charge. The **District Collector, Magistrate, or Commissioner** is the Chairperson, and there are six other members, including local elected representatives and officers like the Superintendent of Police and the Chief Medical Officer.

The DDMA creates and carries out the **District Disaster Management Plan**, ensures preparedness at the grassroots level, conducts rescue and relief operations, and coordinates with local authorities and community groups. It can give directions to any department or local body to use available resources for emergency response.

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**Secretariat and Support Systems:**

- The **NDMA Secretariat** provides administrative and technical support to NDMA.
- There is a **National Disaster Management Operations Centre** with advanced communication systems.
- Institutes like **NIDM (National Institute of Disaster Management)** help with training, research, and public awareness.
- States and districts also have their own disaster response funds and training facilities to support local efforts.

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**Conclusion:**

India’s disaster management organizational structure is well-defined and works at all levels—national, state, and district. It ensures that responsibilities are shared, resources are used efficiently, and communities are better prepared to deal with disasters. This structure promotes coordination among government bodies, scientific agencies, and community groups to build a disaster-resilient nation.

# **State Disaster Management Plan (SDMP)** and **District Disaster Management Plan (DDMP)**

### ✅ State Disaster Management Plan (SDMP)

The **State Disaster Management Plan (SDMP)** is prepared by the State Disaster Management Executive Committee under the guidance of the National Disaster Management Authority (NDMA). It covers how the state will reduce risks, prepare for disasters, and respond when emergencies occur. The plan lists areas in the state that are more likely to face disasters and explains steps to prevent or reduce damage. It also includes training for people and departments to handle disasters effectively. The SDMP is updated every year and shared with all government departments for action.

- **Functions of SDMP:**

1. **Identify Risk Areas:** It recognizes which parts of the state are vulnerable to disasters like floods, earthquakes, or droughts.
2. **Prevention and Mitigation:** It suggests steps to reduce the effect of disasters and includes them in state development projects.
3. **Capacity Building:** It provides training and resources to improve the ability of people and officials to deal with disasters.
4. **Roles and Responsibilities:** It clearly defines what each department or agency must do before, during, and after a disaster.
5. **Review and Budget:** It reviews the plan annually and ensures that necessary funds are included in the state budget for disaster work.

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### ✅ District Disaster Management Plan (DDMP)

The **District Disaster Management Plan (DDMP)** is created by the District Disaster Management Authority (DDMA), headed by the District Collector or Magistrate. This plan focuses on actions to be taken at the district level before and during a disaster. It includes details on rescue, relief, sanitation, health care, and providing shelter to affected people. The DDMP also includes awareness programs, training for local volunteers, and instructions for using district resources. After every disaster, the plan is reviewed to improve future preparedness.

- **Functions of DDMP:**

1. **Emergency Relief:** It ensures quick supply of food, clean water, shelter, and medicines during a disaster.

2. **Resource Use:** The plan allows DDMA to use district resources like vehicles, buildings, or equipment during emergencies.
3. **Health and Cleanliness:** It manages the safe disposal of dead bodies and ensures proper sanitation in relief camps.
4. **Awareness and Training:** It trains local people and volunteers on safety measures and disaster response.
5. **Reconstruction:** It includes plans for repairing roads, buildings, and basic services after the disaster is over.

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Let me know if you need this formatted as notes, a handout, or presentation!