

Lesson- 8

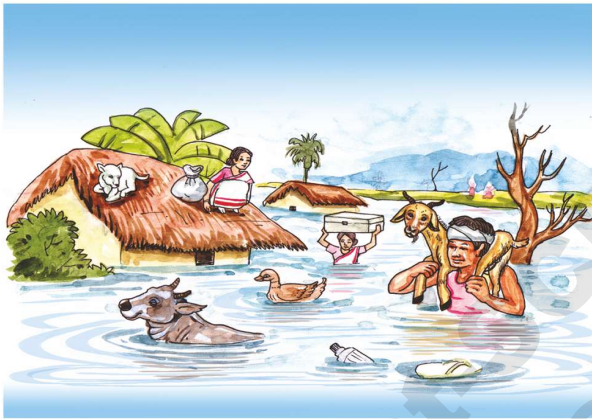
Disasters Around Us



Earthquake



Landslide



Flood



Soil erosion



Forest fire

In the above pictures, can you see an adverse form of the usually seen environment? Let us learn, why does nature take such destructive forms—

Natural or man-made events or phenomena can take tragic form and create catastrophic destruction in an instant. These events or phenomena are called **disasters**. The pictures shown above are illustrations of different types of disasters.

Have you ever felt the floor of your house, walls, different objects, etc. shaking suddenly? Such a situation happens when there is an earthquake.

When there is sudden movement or trembling of the earth's surface, we call it an earth quake. The earthquake comes without any warning. This is a totally natural phenomenon. Most of the time the intensity of earthquake is so less or mere that we do not even feel it. Sometimes its intensity is moderate and sometimes very high.

Effects of earthquake—

- ✧ Sometimes the earth forms crack ejecting out water and sand.
- ✧ Houses break down.
- ✧ The course of the river changes.
- ✧ Dams along the rivers break down resulting in floods.
- ✧ Sometimes landslide occurs.
- ✧ Soil, sand, rocks, etc. from inside the ground comes out.
- ✧ The soil from the earth's surface sinks below to form ponds, lakes, swamps, etc.

The intensity of an earthquake is measured on the Richter scale. The instrument for measuring earthquakes is called a Seismograph.

An example of how the impact of a strong earthquake of high intensity can be very deadly is given below—

The largest earthquake in the history of Assam was felt on the 15th of August, 1950. On that day, the people of Assam celebrated India's third independence day in high spirit. Suddenly, at around evening 7:39 an intense jolt of an earthquake was felt. As a result of this earthquake, the ground formed big cracks from where hot water, mud, sand, rock, etc. came out from underground. The riverbed of the Brahmaputra was raised. In this way, soil from the low-lying areas was deposited forming high lands. On the other hand, the soil from the earth's surface sank below to form ponds, lakes, swamps, etc. The **Chandubi lake** was created by an earthquake. Several houses, bridges, railway tracks, etc. were destroyed. The monuments of Assam were severely damaged. Due to several landslides, the course of the Subansiri river came to still for many days. After this, heavy floods occurred. Around 4700 people in Assam lost their lives in this earthquake. Many animals and birds were killed. A large number of people lost their houses and there were great losses of properties, farmlands, vegetation, etc. The sudden occurrence of this earthquake converted a large area of Assam into a devastated landscape.

Let's know–

The earthquakes taking place under the oceans give rise to big waves in the oceans. Such a wave can reach a height of several meters and can expand around the coastal areas creating destructive floods. This is called a 'Tsunami'. A Tsunami is a natural disaster.

The northeastern states of India generally fall under the earthquake-prone zone. The impact of earthquakes can be very terrifying. But as the saying goes better a thousand times careful than once dead. Therefore, instead of getting afraid during an earthquake, we should follow the safety guidelines bravely.

The safety measures to be taken during an earthquake-

- ☐ Do not panic and run around.
- ☐ When inside the house, one should take shelter under a bed or a table.
- ☐ When inside the school,, one should take shelter under a desk or a table and hold the legs of the table tightly.
- ☐ If possible, go out in an open area.
- ☐ If there is a fire, extinguish it and disconnect the electrical plugs.
- ☐ Stay away from tall trees, electrical wires and posts.
- ☐ Use stairs instead of escalators in multi-storied buildings.
- ☐ Keep battery-operated torchlights in hand.

Ways to reduce the damages which occur due to by earthquakes are given below-

- ☐ Unplanned multi-storied houses should not be built.
- ☐ There should be regular repairing of the cracks or broken parts in the walls, ceiling, posts, etc. of the house.
- ☐ The first-aid box should be made easily available for minor injuries.
- ☐ The faults in the electrical connection should be regularly checked.
- ☐ The news on earthquakes is delivered through radio, television, etc. It is very essential to have a battery-operated radio at home. Because even if there is a power failure, one can get all the updates on earthquake.
- ☐ All the family members should learn to disconnect cooking gas pipes, electric bulbs, electrical appliances, etc.
- ☐ The emergency contact numbers of the police station, fire brigade, disaster management office, doctors, etc. should be carried with us.

Discuss with your group and write—

- What will you do if an earthquake occurs while you are at school?
- What measures can be taken beforehand to reduce the damages by an earthquake?

Flood—



What can you see in the picture?

We are all more or less acquainted with floods. It is an unavoidable calamity of Assam. Assam experiences floods almost every year. Sometimes it can take a dangerous form.

Let's know how floods occur—

Due to heavy rainfall in Assam, the level of water increases in the rivers, tributaries, and other water bodies. When the amount of rainfall exceeds, then the water from the hilly areas comes down overflowing the wetlands. The overflowing water from these wetlands immerses the surrounding regions underwater. This is called a **flood**. Floods can happen as a result of melting glaciers due to global warming or can also result from a strong earthquake. These are the floods that are caused naturally

When the impact of flood increases, it causes severe destruction among human beings and animals. The houses, properties, vegetation, animals, etc. are washed away in the water. As a result, people become homeless and there is a huge loss of property. In the mishaps involved during floods, several human beings, animals, birds, etc. are killed. After the flood is over, the environment becomes polluted and people get infected with diseases like cholera, dysentery, typhoid, etc. In the absence of proper measures, these diseases can take the form of a famine.

Although flood is a natural calamity, sometimes it can also be man-made.

Flood caused by erosion of river dams—

A dam is constructed by restricting the flow of river water. Through these dams, several schemes like production of hydroelectricity, irrigation system, water supply in distant places, etc. are made possible. Sometimes the dams may break down accidentally, causing destructive floods around the surrounding areas.

Floods caused by breaching embankments—

The embankments are built on the banks of the rivers to be relieved from floods. Sometimes these embankments breach off causing floods in the surrounding areas.

Artificial floods—

- ✿ Whenever there is a heavy downpour in the towns and cities, the rainwater carries away the garbages and deposits them in the drains and canals. As a result, the rainwater cannot escape the drains and canals, consequently **artificial floods occur**.
- ✿ As people have filled up the swamps, lakes, etc. for building houses, this has also resulted in the lack of wetlands for the accumulation of water. As a result, a heavy splash of rain floods the houses, roads, streets, etc. with water.
- ✿ Due to the felling of trees in the hilly areas, the soils from the hills are washed away and are dumped into the drainage system, canals, etc. of the towns in the plains.

To control the floods, there is a Water Resource Department in the government. The department has taken several measures to control floods. Some of them are—construction of dams, construction of embankments, digging of drains and canals for the release of excess water, taking steps against soil erosion, etc.

Think and write—

- What are the reasons for the occurrence of artificial floods?

Some measures man can take to get rid of flood—

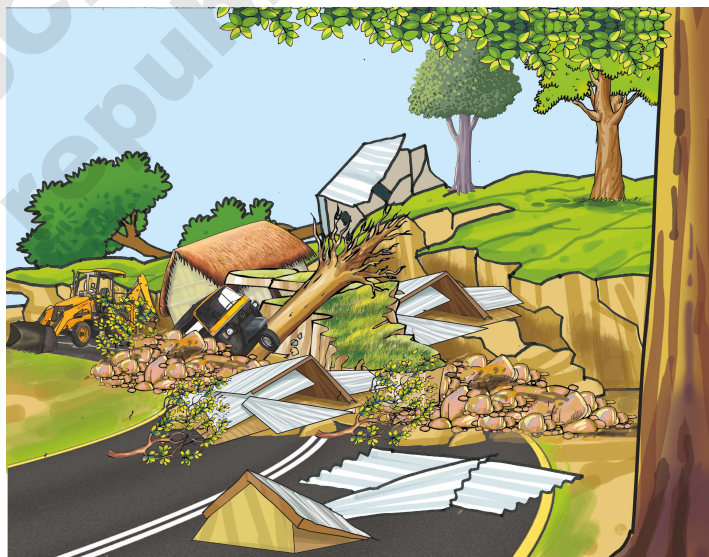
- ✧ Stop construction of houses by filling up the wetlands.
- ✧ Adopt measures to conserve the wetlands.
- ✧ Make proper drainage systems, canals, etc. for the release of water.
- ✧ Stop dumping and piling of garbages here and there.
- ✧ Plant trees. Stop cutting of land on hills and felling of trees. Conserve the hills.

News and information related to floods are provided every day on radio, television, newspaper, etc. For example—news on weather, temperature, rainfall, increasing level of water in rivers, whether the water is above or below the danger level, etc. Such kind of broadcasting or telecasting media alerts the people before any disaster, so that proper measures can be taken on time.

Although flood is a disaster, we also get benefits from it. The flood, water carries and deposits silt making the soil fertile for the production of crops.

Landslide—

What is a landslide? When a large amount of debris, rocks, sands, etc. from any part of the outer layer of the soil moves down the slope, we call it a landslide. This disaster can be both natural and man-made. Due to continuous rainfall, windstorms, deforestation, excavation, etc. the soil becomes loose resulting in landslides. The landslides resulting from the overflowing floodwater drains away the nearby vegetation, houses,



properties, crop fields, etc. in the river. Soil erosion by the rivers or moving down of the soil, rocks, etc. from the hills cause landslides. Due to the landslides the nearby houses, shops, markets, etc. are destroyed. Sometimes people and livestock can get buried under the debris resulting in death. Due to landslides, the roads in the hilly areas get blocked, disrupting transport and communication. Frequent landslides can be seen in the nearby regions of the Himalayas.

How to prevent landslides—

Landslides can be prevented through afforestation to much extent. The roots of the trees hold the upper layer of the soil tightly preventing soil erosion. Therefore, in the areas with a large number of trees, the cases of landslides are very few.

Drought—

Have you ever thought about how difficult it is to manage if water is scarce in our house just for a day? What will be the situation if the scarcity of water continues for a very long time? Drought is such a disaster where the situation is completely opposite of the flood. Due to the prolonged absence of rainfall, the sources of water of the earth's surface, as well as groundwater, dries out. The dry soil results in developing cracks. Human beings, animals, birds, insects, and plants suffer from scarcity of water. Vegetation dries away. Due to scarcity of water, farmers are not able to cultivate their lands. Due to lack of cultivation, food is scarce. People and animals have to starve. Sometimes, there is not even a drop of water to drink.



Poverty is seen to prevail in such types of situations.

Although drought is a natural disaster, due to the increasing deforestation by human beings, the amount of rainwater has decreased resulting in a drought like situation.

Forest fires—

Forest fire is the fire occurring in the forests. Natural occurrence of forest fires are very less. Mostly, human beings are responsible for the forest fires.

Forest fires due to natural reasons—

Have you ever seen lightning strike on a tall tree burning it completely? When there is a thunder strike on a forest full of vegetation, the trees can catch fire creating forest fires. Sometimes it can last only for a few moments because a heavy rainfall would mostly douse the fire. Sometimes, the accidental friction between two rocks may ignite flickers of fire which gets caught by the dry twigs and branches of trees. As a result, forest fires may spread throughout the whole forest.

Industrial disasters—

The disasters taking place in the industries and factories are another type of man-made disaster. Sometimes accidentally there is the leakage of poisonous gases from the industries. An example of how such a situation can affect biodiversity is given below—

In the Baghjan Oilfield of Tinsukia, Assam the pipe of an oil well exploded discharging poisonous gases and oil continuously for many days. This poisonous gas and oil created pollution in the environment. After inhaling the poisonous gas in the atmosphere, a large number of animals, birds, and insects were killed. As a result, the biodiversity of the nearby located Dibru-Saikhowa National Park and the fauna of Maguri Motapung Beel faced endangerment. As a result of the mixing of these poisonous gases and oil with water, the asset of Assam in Maguri Motapung Beel— the river dolphins, fish, etc. along with other aquatic animals were killed. Human beings also suffered from diseases on skin. Likewise, for thirteen days poisonous gas and oil were discharged, then suddenly the oil well exploded with a loud noise one day. There was a fire in the well as a result of the explosion. Two employees died on the spot and several others were injured. The fire spread to around 4—5 km immediately. In this fire tragedy, several villages, tea gardens, crop fields, valuable plants, animals, birds, insects, houses, shops, properties of people, etc. were burnt into ashes. On becoming homeless, many people had to take shelter in relief camps. This fire kept on burning for many days. In this way, due to the negligence of human beings, we may face many disasters in our lives.

Epidemic—

An epidemic is another natural disaster. The most frightful disaster of the year 2020 is the Covid-19 disease caused by the microorganism Coronavirus. At the end of the year, people from China were the first to be infected by this disease. Taking the form of a pandemic, this contagious disease created terror all over the world. Under the impact of this pandemic, the lives of people came to a standstill. People were locked down in their houses for a very long time. As a result, many became jobless. As a consequence, the world is now facing an economic crisis. Till now, lakhs of people have lost their lives due to this pandemic.

A disease in which a large number of people from the society or a region is affected, such a disease is called an **epidemic**. An epidemic prevalent over many countries and continents is called a **pandemic**.

General effects of disasters–

- As a result of disasters, vegetations forests are also destroyed.
- Both human beings or animals may face danger or even get killed.
- The natural environment will be degraded.
- Properties of people are destroyed.
- Obstacles arise in the development of the country.

Group activities–

- Prepare an album by collecting pictures of different disasters from newspapers, magazines, etc.
- In almost all the regions of Assam, floods occur every year. Prepare three lists of the measures to be taken before a flood, during a flood, and after a flood. (Take help from your teacher.)
- Prepare a poster by writing different slogans on disaster management. (Take help from your teacher.)
- In the following two tables, names of the disasters or tragedies and awareness or precautions to be taken in that situation are given. Match them and write.

Disaster or Accident	Awareness or precautions
Fire	Do not panic and run around.
Landslide	Electricity conducting wires and switches should be regularly checked.
Flood	One should be careful of drinking water.
	Tress should not be cut haphazardly.
	Do not cut the hilly land haphazardly or carelessly and use them for another purpose.
	Domestic animals should be kept in a safe place.

Natural disasters occur suddenly. These disasters occur mainly due to natural reasons. Apart from the loss of properties, natural disasters sometimes can also take lives. As a result of disasters, there can be changes in the environment including severe damages. **Man-made disasters** occur due to the negligence of human beings. However the disaster may occur, its consequence can be very frightful.

Exercise

1. Write the answers —

- (a) Write the names of three natural disasters.
- (b) What kind of disaster can take place in an artificial flood?
- (c) How is forest fire created?
- (d) Write the reasons for landslides.

2. Match column “A” with column “B”—

‘A’	‘B’
Landslide	The water bodies get dry.
Drought	The outermost layer of the earth shakes suddenly.
Forest fire	The overflowing of water bodies.
Earthquake	A large amount of debris, rocks, sands, etc. falls down.
Flood	Fire occurring in the forests.

3. Write briefly on the disasters below—

- (a) Drought (b) Landslide (c) Earthquake

4. Distinguish between—

- (a) Drought and flood
- (b) Natural disaster and man-made disaster

5. Fill in the blanks—

- (a) In 1950, a large _____ took place in Assam.
- (b) Through afforestation _____ can be prevented.
- (c) Lightning strike can naturally cause _____ in forests.
- (d) Exploision in Baghjan oilfield is a _____ disaster.

6. What do you understand by disaster?

