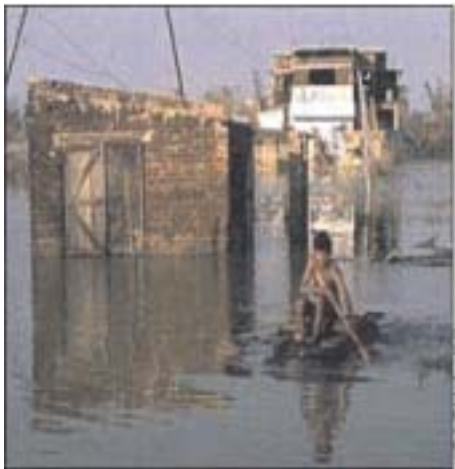


Chapter 4

FLOODS



The story of Partho



12 years old Partho lives with his parents and three little sisters in a small village nearby the big Mahanadi River in Orissa, close to the coast. His father is a farmer and has a big large field where he cultivates rice. Rice needs lots of water to grow and so Partho's father was very happy when the monsoon started. If he could get good rice and sell it, he would have money to send Partho's younger sisters to school! One day it started to rain and it rained hard for many days. People were happy but the rain didn't stop. After ten days, the villager started to get very worried

as the river was swelling. Their fields were at risk of being inundated by the water. Flooding is dangerous for the villagers as it could destroy their houses and crops and also kill them and their cattle.

Partho was home with his sisters when they heard people screaming that the river was starting to overflow. They were all very scared as their house was not very far from the river. Suddenly, Partho remembered what the teacher had told them at school a few weeks earlier during a cyclone and floods preparedness lesson. There was a cyclone shelter nearby the village where people could find refuge in case of cyclones and also floods.

Partho took his sisters to the shelter and they stayed there together with all the other villagers and also their parents. They had to remain in the shelter for three whole days and nights, watching helplessly as homes, fields, bullock-carts, everything got submerged. When they finally came out they were scared and very tired but at least they were alive!

Read the story given above. What helped Partho to save himself and his near and dear ones from being washed away? This is called **PREPAREDNESS**. Yes! Disasters occur in all the countries in the world. But the community that prepares itself to face them better survives better.



What is a Flood?

A flood occurs when water flows or rises above and beyond its normal place or course. The danger this causes to people and buildings is called the **flood hazard**. The most common kind of flood happens when a river overflows its banks, and water spreads on to the surrounding land, called a **riverine flood**.

This is caused by rainwater or melting snow draining into the river faster than the river can discharge water into the sea. The amount of water that a river can hold before a flood starts is known as **channel capacity**.

Other causes of flooding are strong tides, storms at sea, cyclones, and tsunamis. **Sediment** deposition or silting of riverbeds and the synchronisation of river floods with sea tides compound the problem of floods in the coastal plains.

Important Terms:

1. **Flood hazard:** the risk of damage to life, livelihoods or property from flooding
2. **Riverine flood:** a flood caused when a river overflows its banks
3. **Sediment:** small particles of soil carried in a river which settle on the river bed, or on floodplains
4. **Channel capacity:** the maximum flow of water in a river



Other causes of floods	
u	Blocking of river channels by land slides
u	Narrowness of the river
u	Change in the course of the river
u	Inefficient engineering design in the construction of embankments, dams and canals.

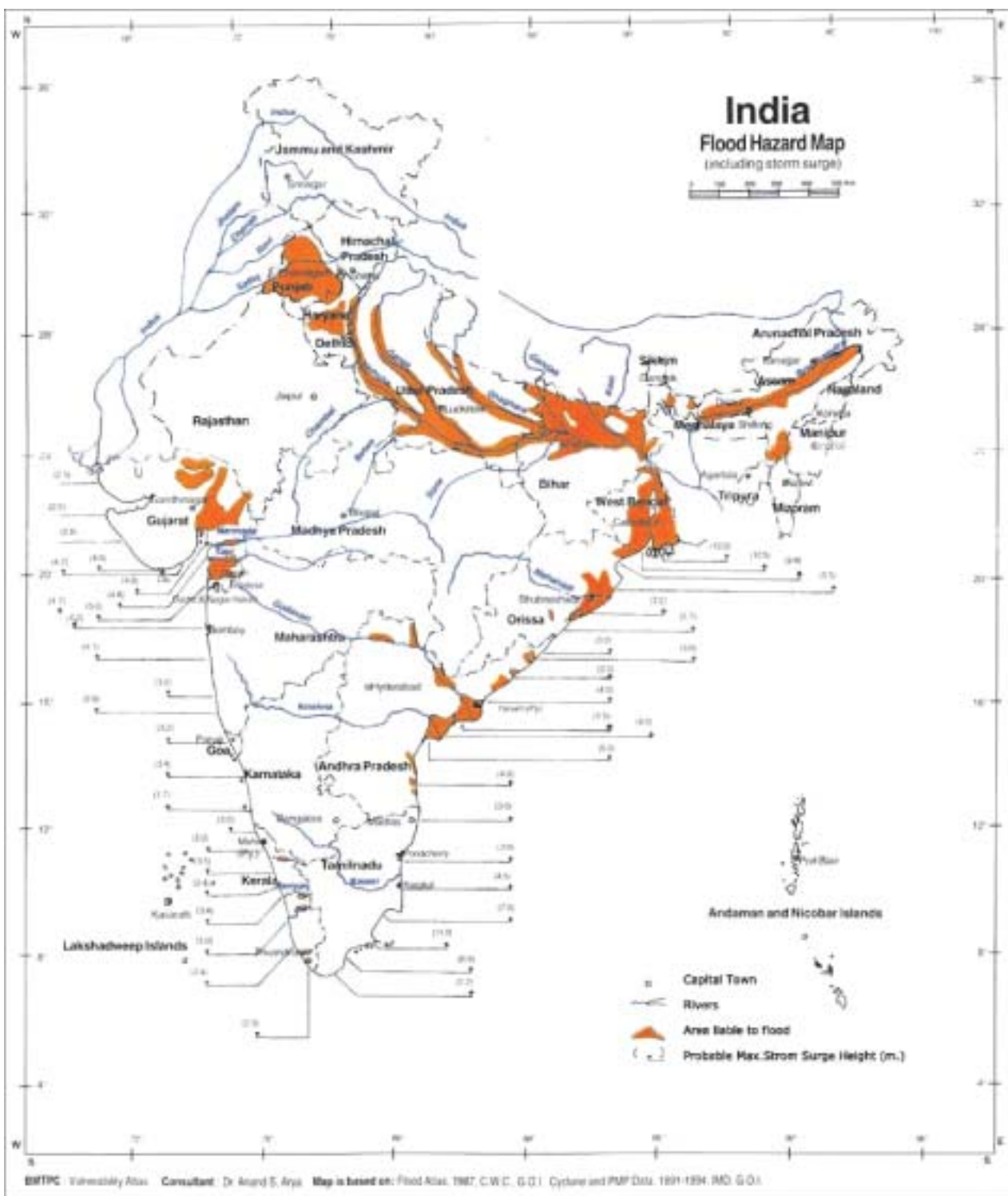
Activity: Write a caption for the above picture

Where do floods occur?

Unlike cyclones, floods are common to all countries. North and Eastern India are particularly prone to floods.

The most flood-prone areas are the Brahmaputra, Ganga and Meghana basins in the Indo-Gangetic-Brahmaputra plains in north and Northeast India, which carry 60 per cent of the nation’s total river flow. In India it is spread over 15 states and about 47 per cent of India’s population resides in the basin. The other flood-prone areas are the Northwest regions with the west-flowing rivers like the Narmada and Tapti, Central India and the Deccan Plateau with major east-flowing rivers like the Mahanadi, Krishna, Godavari and Cauvery.

The map here shows the flood-prone areas in India. The Ganga and the Brahmaputra cause maximum flooding.



The main season for floods in India is the west monsoon period of June to September. Nearly 75 per cent of the total rainfall is concentrated over a short monsoon season of four months (June-September). As a result the rivers witness a heavy discharge during these months, leading to widespread floods.

Effects of flooding

Flooding is one of the most destructive of all forms of natural disasters causing heavy economic and human losses.

Read the following news report:

Indians flee monsoon floods

Parts of Assam and the neighbouring state of Arunachal Pradesh remain cut off from the rest of the country, as flooding waters have destroyed transport links. Floods in the Northeast of India are an annual phenomenon. In August 2000, floods in the region killed 100 people, and left 70,000 people homeless in Assam alone. Environmentalists blame soil erosion, the silting of riverbeds and the increasing population in the flood plains.

Sunday, 7th June 2002, The Hindu

We should know, that

- u floods are an annual feature in some parts of India.
- u flooded areas may get isolated from the rest of the country.
- u regions near coastal areas and rivers are more vulnerable to flooding.
- u Economically and socially backward communities are more vulnerable to the destructive effects of floods. These communities take longer to come back to the kind of life they were leading before the disaster struck.

FLOOD PREPAREDNESS

Floods, which are a natural hazard, need not become a disaster, if we are prepared to deal with them. We know that trained DMTs (Disaster Management Teams) that are in the process of being constituted in each village or urban neighbourhood, would be

responsible for preparedness and response. Each one of us must be involved in the process of preparedness, creation of awareness and the working of skilled emergency response teams. This would reduce loss of life and minimise human suffering. This guide lists simple things that you and your family can do to stay safe and protect yourself from floods.

BEFORE FLOODING OCCURS

- u Know the route to nearest safe shelters that you have learnt about earlier. You must have the following ready, to carry to the safe shelter, if need be. This is your Emergency Kit:
- u First aid kit with extra medication for snakebite and diarrhoea.
- u Strong ropes for tying things.
- u A radio, torch and spare batteries
- u Stocks of fresh water, dry food (chana, mudi, gur, biscuits, etc.), salt and sugar, kerosene, candles and matchboxes.
- u Water-proof bags to store clothing and valuables
- u Umbrellas and bamboo sticks (to protect you from snakes).
- u If in rural areas, identify areas that are higher than the surroundings, or get your community to build an earthen mound to locate cattle, etc in the event of a flood.

WHEN YOU HEAR A FLOOD WARNING OR IF FLOODING APPEARS LIKELY

- u Tune in to your local radio or watch TV for warnings and advice
- u Keep vigil on flood warning given by local authorities.
- u Keep dry food, drinking water and warm clothes ready
- u In rural areas, prepare to take bullock-carts, other agricultural equipment and domestic animals to safer places or to pre-identified areas such as mounds.
- u Check you emergency kit.

IF YOU NEED TO EVACUATE

- u Pack clothing, essential medication, valuables, personal papers, etc. in water-proof bags, to be taken to the safe shelter.

- u Inform the local volunteers or DMT (if available) the address of the place you are evacuating to.
- u Raise furniture, clothing, appliances on to beds or tables (electrical items highest)
- u Turn off power
- u Whether you leave or stay, put sandbags in the toilet bowl and cover all drain holes to prevent sewage back-flow.
- u Lock your house and take the recommended or known evacuation routes for your area to the safe-shelter
- u Do not get into water of unknown depth and current.

DURING FLOODS

- u Drink boiled water.
- u Keep your food covered, don't eat heavy meals
- u Use raw tea, rice water, tender coconut water etc. during diarrhoea
- u Do not let children remain on empty stomach.
- u Use bleaching powder and lime to disinfect the surroundings.
- u Avoid entering floodwaters. If you must, wear proper protection for you feet and check depth and current with a stick. Stay away from water over knee-deep depth.
- u Do not eat food that has got wet in the floodwaters.
- u Boil tap water before drinking in rural areas. Use halogen tablets to purify water before drinking (ask Village Health Worker for details).
- u Be careful of snakes. Snakebites are common during floods.

You as a student have also a very major role to play in preparing for disasters. In recent times volunteers have played a key role in helping people to rebuild their lives and restore normalcy whenever disasters have tormented the country. They have also played a vital role in creating awareness on disaster preparedness

PROFILE IN COURAGE

BIRA KISHORE GOCHAYAT

Bira Kishore Gochayat who works in Paradip, a port in Orissa, lived up to his name (Bira mean a brave). It was the fateful day of 30 October 1996, the second day of the terrible super cyclone, which battered the Orissa coast. Gales blowing at more than 250 kmph accompanied by lashing rains made the scene frightful, the strong gales pushing the sea waves inland by a few kilometres. Tidal surges at a height of 24 feet hit the shoreline washing away whatever lay in its path. Houses, human beings and cattle were swept off in the dangerously swirling current of the tidal surge. Bira fought to save himself as did so many others. As he perched himself atop of two-storied building, a relatively safe place, he spotted a man desperately battling the strong tidal current. Losing no time, Bira did what his conscience asked him to. He plunged into the swirling water and managed to catch hold of the drowning man and pulled him to safety. It was no easy job, he recollects later, with the strong gales buffeting the water in all directions. Barely had Bira put the man on dry land, he saw some other desperate hands waving at a distance. The rest of the morning saw a tireless Bira risking his life several times to fish out helpless people from the currents. On that day he managed to rescue ten persons from the jaws of death. The fact that his own hut had collapsed and all his personal belongings had got swept away did not distract him from worrying about the well being of others around him.

ACTIVITY 1

- ▶ Find out if your village or locality (if in a city) has a DMT.
- ▶ Ask how you can help to prepare for disasters, and create awareness.
- ▶ If your area is flood prone, do a survey and make a list of old people, women and young children.
- ▶ Survey your regions and note down the buildings on raised platforms, which can be used during floods as a safe-shelter. You must also find out the nearest route to the safe shelter, and how many persons it can hold.
- ▶ Make posters on how to save yourself from floods and stick them in public places like markets, school buildings, community centre, etc.
- ▶ Discuss with your friends and prepare a contingency plan for yourselves. Ask your DMP for the village contingency plans and how you can be part of it.

ACTIVITY 2

Read the newspaper extract of 2002 below:

In Assam, soldiers have helped rescue thousands of people marooned in remote villages, and more troops have been put on 'stand by' for relief operations. An army spokesman said that disaster management squads in speedboats and helicopters were also on standby. This is just the beginning of India's monsoon season, but the rains have been unusually heavy so far.

- A. Find out which are the agencies and organisations that play an important role in flood preparedness and response.
- B. Make a list of their local offices and people heading them. Ask your teacher to contact Red Cross or any of the other agencies to come and tell you how they prepare for floods and other disasters.

Read the following newspaper reports

ASSAM: Several embankments on the main Brahmaputra River have been breached, with water engulfing more than 600 villages. About 30,000 hectares of crops were also submerged. All rivers in Assam are flowing at dangerous levels threatening several new areas, officials said. The eastern district of Dhemaji was among the worst affected by a breach in the embankment, with at least 250000 people stranded by the rising waters.

UTTARKASHI: Heavy monsoon rains have triggered flash floods in parts of northern and western India. A cloudburst that hit nearby Uttarkashi district created a torrent of muddy water that swept away at least six villages while flowing down the mountains, said D.K. Gupta, from the state control room

M A H A R A S H T R A : Flooding in the western state of Maharashtra where a few cases of cholera have been reported close to Mumbai.

HIMACHAL PRADESH: More than 100 people were reported to have died in flash floods in the northern state of Himachal Pradesh earlier this week.

The river Sutlej, which runs through the state, was reported to have risen to more than 40 feet above its not level in some places.

BIHAR: Water from two of India's biggest rivers—the Brahmaputra and the Ganges—has engulfed thousands of villages. According to some estimates, nearly half a million people have been made homeless in the northern states of Bihar and Assam.

ACTIVITY 3

Identify the States and areas that are vulnerable to floods by the following rivers:

1. Brahmaputra

2. Ganga

3. Sutlej

ACTIVITY 4

Given below are the names of common rivers in India. Against each river, tick in the appropriate box to indicate whether it floods frequently or not.

River	Floods frequently	Does not flood frequently
1. GODAVARI		
2. BRAHMAPUTRA		
3. MAHANADI		
4. KAVERI		
5. GANGA		
6. SUTLEJ		



EXERCISES

1. List the causes for floods.
2. Suggest measures to prevent damage from frequent flooding.
Two measures have been suggested, add more.
 1. Raising the height of public and private buildings in low lying areas
 2. De-silting river beds regularly
 3. _____
 4. _____
 5. _____
3. How can communities prepare to face floods?
4. What should a community do before every flood season, to be prepared?