

I. Environmental Movement:

An environmental movement can be defined as a social or political movement. It is also known by the terms of green movement or conservation movement.

Major Environmental Movements of India:

- (i) Bishnoi Movement
 - (ii) Chipko Movement
 - (iii) Silent Valley Movement
 - (iv) Appiko Movement
 - (v) Narmada Bachao Andolan
 - (vi) Tehri Dam Conflict/Andolan
- } Covered in Unit-I

(i) Bishnoi Movement:

In 1731, Ajay Singh the king of Jodhpur wanted large quantities of wood for burning bricks to build his palace. He sent his minister Guindhardas, with wood cutters to cut the trees in the forests mainly of khejri trees near the Bishnoi villages.

Amritadevi, a mother of three wanted to save the trees. She hugged the trees and begged minister to stop the cutting of trees.

Surindharadas ordered the men to proceed and they^② cut down the trees and the Amrita devi and her daughters. This news spread and more villagers came to protect the trees. But the felling of the trees continued and by night, 363 people had given their lives in the cause of the forest.

When the king came to know about the incident he felt sorry for the villagers and banned tree cutting in the Bishnoi forests forever. The Government of India has instituted Amritadevi Wildlife Protection Award to be given to village communities working for the protection and conservation of forests and wildlife.

(ii) Chipko Movement :

This movement was also started as a spontaneous reaction against the cutting of trees in 1973 first in Chamoli district and later in Tehri-Garhwal district of Uttarakhand.

Gaura devi and other women hugged the trees and tied sacred threads around the trunks of trees hence it was called Chipko Movement. Later on this act of few women became a movement under the

③ leadership of Chandi Prasad Bhatt and Sunderbans Bahuguna.

The main demand in these protests was that the benefits of the forests (especially the right to fodder) should go to local people. The Chipko Movement gathered momentum in 1978 when the women faced police firings and other atrocities. As a result in 1980, Forest Conservation Act was passed. This became a turning point in the history of eco-development struggles in the region and around the world.

(iii) Silent Valley Movement :

This movement can be categorised as the first organised environmental movement of India. It was organised in 1978, Palakkad district of Kerala. Friends of Trees Society an NGO, was the main organizer of the Movement. It was against the development of an hydro-electricity project in the Silent Valley, an evergreen tropical forest. Several other NGOs also strongly oppose the project in the fear

of loss of biodiversity and dense forest cover ④
due to project sanctioned by the government.

In January, 1981, bowing to unrelenting public pressure, project was called off and silent valley was declared as protected area. Later on, area became Periyar National Park.

(iv) Appiko Movement :

It is also known as the Chipko Movement of Southern India. Movement was facilitated by the Pandurang Hegde in Uttara Kannada and Shimoga districts of Karnataka State. It was also mainly against the felling and commercialization of natural forest and the ruin of ancient livelihood.

The Appiko Movement used various techniques to raise awareness such as foot marches in the interior forest, slide shows, folk dances, street plays etc. The second area of the movement's work was to promote afforestation on denuded lands.

II. Natural Disaster Management ⑤

Disaster° Disaster is an undesirable occurrence from forces that are largely outside human control, strikes quickly with little or no warning, which causes or threatens serious disruption of life and property including death and injury to a large number of people and requires therefore mobilisation of efforts in excess of that which are normally provided by statutory emergency services (NDMA).

Following are the major natural disasters °

- 1) Earthquakes
- 2) Tsunami
- 3) Tropical cyclones
- 4) Floods
- 5) Landslides

1) Earthquakes: Most unpredictable and highly destructive of all the natural disasters. Earthquakes result from a series of earth movements brought about by a sudden release of energy during the tectonic activities in the earth's crust.

In India, most earthquake vulnerable states are Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, Darjiling of WB and other states of North East.

Mitigation:

- (i) Establishing monitoring centres (seismological) for regular monitoring & fast dissemination of information by employing GPS.
- (ii) Preparing a vulnerability map of the country.
- (iii) Modifying the house types and building designs in the vulnerable areas and discouraging construction of high rise buildings.
- (iv) Making it mandatory to adopt earthquake resistant designs in vulnerable areas.

2) Tsunami: Earthquakes and volcanic eruptions that cause the sea-floor to move abruptly resulting in sudden displacement of ocean water in the form of high vertical waves are called tsunamis (seismic sea waves). The speed of wave in the ocean depends upon the depth of water than in the ocean deep. As a result of this, the impact of tsunami is less over the ocean and more near the coast. Where they cause large scale devastations.

Unlike other natural disaster, the mitigation of hazards created by tsunami is difficult, mainly because of the fact that losses are on a larger scale. It is beyond the capacity of individual government to mitigate the damage. India has volunteered to join the 'International Tsunami Warning System' after the December, 2004 tsunami disaster.

3) Tropical Cyclones: Tropical cyclones are intense low-pressure areas confined to the area lying between 30N and 30S latitudes, in the atmosphere around which high velocity winds blow. Horizontally it extends up to 500-1000km

and vertically from surface to 12-14 km. ⑧

A tropical cyclone or hurricane is like a heat engine that is energised by the release of latent heat on account of the condensation of moisture that the wind gathers after moving over the oceans and seas.

Coastal areas are often struck by severe cyclonic storms with an average velocity of 80 km/h. It results into inundation of human settlements, agricultural fields, damaging crops etc. Only, mitigation is the forecasting of weather in more precisely and timely.

(iv) Floods: Inundation of land and human settlements by the rise of the water in the channels and its spill-over presents the condition of flooding. Unlike other natural disasters, the causes of floods are well established. Floods are relatively slow in occurrences and often, occur in well identified regions and within expected time in a year.

Floods occur when surface run-off of the streams and rivers exceeds its carrying capacity and flows into the

neighbouring low-lying flood plains. ⑨

Indiscriminate deforestation, unscientific agricultural practices, disturbances along the natural drainage channels and colonisation of flood plains and river beds are some of the human activities that play an important role in increasing the intensity, magnitude and gravity of floods.

Rashtriya Barh Aayog (National Flood Commission) identified 40 million hectares of land as flood prone in India. Floods don't only valuable crops every year but it also damage physical infrastructure such as roads, rails, bridges and human settlements.

For mitigation of flood, the construction of flood protection embankments, in the flood prone areas, construction of dams, afforestation and discouraging major construction activities in the upper reaches of most of the flood creating rivers etc. are some steps that need to be taken up on urgent basis.

(V) Landslides: The rapid sliding of large mass^⑩ of bedrocks in hilly regions is called landslide. Unlike other disasters that are sudden, unpredictable and largely controlled by macro or regional factors, landslides are largely controlled by high localised factors.

India has been divided into following landslide zones:

- (i) Very high vulnerability zone
- (ii) High " "
- (iii) Moderate to low " "

Major consequences of landslides are roadblock, destruction of railway lines etc. Diversion of river courses due to landslides can also lead to flood and loss of life and property.

There are certain specific measures to deal with the land slides such as:

- 1) Restriction on the construction and other development activities like roads and dams in vulnerable zones
- 2) Limiting agriculture to valleys and area with moderate slopes.
- 3) Control on the large human settlements.

Disaster Management: There are three stages of disaster management —

- 1) Pre-disaster management - involves generating data and information about the disasters, preparing vulnerability zoning maps and spreading awareness among people about these.
- 2) During disasters; rescue and relief operations such as evacuation, construction of shelters and relief camps, supplying of water, food, clothing and medical aids etc. should be done on the emergency basis.
- 3) Post disaster - operations should involve rehabilitation and recovery of victims. It should also concentrate on capacity building in order to cope up with future disasters.

Introduction of the Disaster Management Act, 2005 and establishment of National Institute of Disaster Management along with National Disaster Management Authority (NDMA) are the other important steps to mitigate disasters.