

Bangladesh floods 1998:

Background:

The nation of Bangladesh is relatively young having only existed as an independent country since 1971. Until 1947 the country was part of the British Empire in India and then became East Pakistan, governed from Islamabad in West Pakistan. After a war of independence in 1971 Bangladesh achieved independence. Most of the land of Bangladesh is river delta, material brought down by the Rivers Ganges and Brahmaputra and deposited at the head of the Bay of Bengal. Much of this land is relatively new having been deposited in recent centuries with continual changes in coastline and the course of rivers. As a result of this most of the country is low lying and flat with over half below 5m above sea level. It is therefore vulnerable to flooding.

Bangladesh is a poor country with an average income of \$240 per person (Compared to India \$340, Indonesia \$980 and the United Kingdom \$18700) and therefore does not have the money to invest in flood defences and when floods occur relies on international aid to meet the needs of the people. Medical care is available to relatively few with 12,500 people per doctor and an average life expectancy of only 56 years. In addition education is not widely available and the adult literacy rate is only 36%.

The population is large, 144 million, and growing rapidly with a birth rate and death rate of 22 and 9 per thousand. In 1950 the population was only 42 million and has therefore nearly tripled in the last half century. This large and growing population needs land to farm and the delta provides fertile soil for this. As a result a large proportion of the population live on land vulnerable to flooding.

Most of the population (82%) live in the countryside and there are relatively few towns with over 100,000 inhabitants and only 2 million cities, the capital Dhaka (6.1m) and Chittagong (2m). Agriculture accounts for 59% of employment and almost all rural dwellers are subsistence farmers growing crops or keeping animals to feed themselves. These farmers are very vulnerable to flooding as they depend on what they produce to feed their families and rarely have any money to enable

them to buy food if the crops fail due to a flood. Many of these people are poor with over half the total population living below the poverty line of 2250 calories per day and a higher proportion in rural areas.

Causes:

Physical causes of flooding in Bangladesh -

- Bangladesh is a very low lying country, with 70% of its land area being less than 1m above sea level and 80% of it being floodplain .
- Bangladesh receives large amounts of water passing through it with two major rivers (the Ganges and Brahmaputra) converging and forming a huge delta (see picture) formed from silt deposited by the river as it enters the sea. Both rivers have large volumes of water flowing through them to the sea as they have large drainage basins which increasing the flood risk.
- Bangladesh has a monsoon climate and the annual torrential rains which result often result in the rivers exceeding their capacity and flooding.
- In the spring, melting snow from the Himalayas further increases the flood risks as torrents of melt water enter the rivers at their source.

Human causes of flooding in Bangladesh -

- Increasing population pressure in the foothills of the Himalayas where the rain contributes to the source of the River Ganges and Brahmaputra has resulted in intense deforestation. It is believed that this reduction in interception has resulted in more water entering the rivers - indeed with 92% of the area drained by the rivers being in countries other than Bangladesh, Bangladesh's proneness to flooding is exacerbated by population and environmental issues in countries other than its own, making it increasingly difficult to target the problems.
- Indeed deforestation in the headwaters is also believed to be responsible for the increased soil erosion which has led to large amount of silt being washed into the rivers and subsequently being deposited on the river bed, reducing its channel capacity and increasing the likelihood of flooding.

- Increasing population pressure in Bangladesh itself has resulted in the sinking of many new wells resulting in the lowering of the water table and the subsequent subsidence of land making it even more prone to flooding.
- Bangladesh is an LEDC and its lack of money and heavy national debt means that little money is available to spend on flood protection methods / defences and many existing defences lack upkeep and are of questionable use.

Consequences of the flooding:

Positive outcome –

- As well as providing water for crops, when flooding occurs, as there is friction between the water and the surface of the land, the water slows down and loses its energy. This loss of energy results in the deposition of rich fertile soil resulting in the providing important nutrients enabling people to grow crops.
- This deposition of silt also creates land upon which people can live - for example the Ganges delta has been formed in this way as deposition has occurred where the river has entered the Bay of Bengal.

Negative outcome –

- Over two thirds of the land area was covered by water and the capital, Dhaka, was 2m underwater.
- 30 million people were made homeless in the floods with many losing all their belongings.
- 1,070 people died - this death toll resulted from a number of things. As well as people being killed by drowning in the flood waters, health problems increased the number of deaths further. Contamination of water by waste and dead bodies / animals, and the lack of a clean water supply resulted in the spread of disease such as cholera and typhoid. Further deaths from snake bites and other injuries which led to death through the lack of access to medical care.
- Food supplies were severely affected as flooding destroyed the rice stocks with a total of 668,529ha of crops being destroyed.

- The impact on the economy was significant with Bangladesh's export industries seeing a 20% decrease in production with over 400 clothing factories forced to close.
- Communications became difficult, with shopping impossible in the main port, as well as roads and railways having been swept away making the distribution of aid and the rescue operation very difficult.

Response to the flooding:

Immediate action –

- International food aid programmes.
- The distribution of free seed to farmers by the Bangladesh government to try and reduce the impact of food shortages - the government also gave 350,000 tonnes of cereal to feed people.
- Volunteers / aid workers worked to try and repair flood damage.

Long term action –

- The creation of embankments along the river to increase channel capacity and restrict flood waters.
- Constructing flood protection shelters - large buildings raised above the ground) to shelter both people and animals.
- Emergency flood warning systems and plans made for organising rescue and relief services.
- Providing emergency medical stores in villages
- Building flood proof storage sheds for grain and other food supplies
- Dam construction upstream and major embankments around Dhaka

In conclusion i think that if the Bangladesh government completes all long term actions within a short time then all will be good and when it comes to a severe flood, nothing will be at loss, but if the government fails at completing the long term action within a short time then a flood, who knows how great it could be, could fall upon Bangladesh and destroy the cultural city once again, leading to economic and population disaster.

