**Flooding in Bangladesh, 2012**

Floods occur each year in Bangladesh sometimes these are very serious causing much loss of life for example in 1998 when two thirds of the country was covered in water, 30 million were made homeless and over 1000 people died. The majority of Bangladesh’s 140 million inhabitants live on the floodplains of the Ganges and Brahmaputra and they need the floods to enable them to grow rice and jute. The floods also deposit silt which makes the soil fertile. However, the inundation (flooding) is often so intense that lives and crops are ruined. Bangladesh suffers from two types of flood: river flooding and storm surges (coastal flooding) from the Bay of Bengal.

Bangladesh can get more rain in four months than London gets in two years!

**Causes**

**Climatic**

● Bangladesh has a monsoon climate, receiving between 1800 mm and 2600 mm of rainfall per year. However, 80% of this rainfall takes place in four months (June to September). On one day in June 2012, Chittagong received 40cm of rain in a single 12 hour period.

● High temperatures from June to September, cause ice and snow to melt in the Himalayas where the Ganges and Brahmaputra have their sources and tributaries.

● Tropical cyclones which are funnelled up the Bay of Bengal make sea levels rise and stop the river flood water escaping. As the land becomes shallower, the water builds up to form a surge up to 6 metres in height.

**Physical**

● Half the country lies less than 6 metres above sea level.

● Most of the population live on the silt deposited by the Ganges and Brahmaputra Rivers, which forms a delta. However, the continuous deposition of silt tends to block the main channels and raise the height of river beds, making severe floods more likely.

● Once rivers overflow their banks, the water can spread a vast distance across the flat delta floodplain.

● High tides in the Bay of Bengal stop the flood water from being able to escape.

**Human**

● Global warming is causing glaciers in the Himalayas to melt and the sea level of the Bay of Bengal to rise.

● Urbanisation on the delta floodplain has led to more run-off and a shorter lag time (the time between maximum rainfall and maximum discharge in the river).

● Deforestation in the upper course of the river (Nepal) has led to more run-off which allows more sediment to build up, which leads to a higher risk of flooding.

**Effects**

**Environmental**

● The flood was so deep in places that only the tops of roofs and trees could be seen.

● Landslides were caused by the soil becoming saturated.

● ‘Char’ areas (low flat land made up of deposited silt) were destroyed.

● The deposits left by this severe flood were infertile sand rather than silt. When the water receded the land was infertile.

**Social**

● At least 139 people were killed.

● City of Chittagong deluged.

● In an LEDC (less economically developed country) many are too poor to own a telephone or TV and did not get advance warning to escape

● Food shortages due to death of livestock and submerged crops (rice, jute and sugar) being submerged.

● Infrastructure such as roads, railways and bridges were destroyed.

● 360,000 homes were destroyed or damaged and 50,778 people were evacuated.

● Some parts of the country were without electricity for several weeks.

● Flood water caused some wells to become polluted.

● As people evacuated to higher ground, crowding aided the spread of dysentery, cholera and diarrhoea.

● Hospitals were crowded.

**Responses**

● Food grain was imported.

● Medical care and water purification tablets were provided in treatment centres and by mobile teams.

● Newspapers gave advice on how to avoid drinking dirty water.

● Rice and water was given out by Save the Children Fund and Oxfam.

● After the extremely serious flooding in 1989, the Flood Action Plan (costing over $650 million) was proposed by rich countries to be funded by the World Bank. The plan included:

* building large embankments
* early flood warning systems
* flood shelters made of concrete built on stilts
* dams
* coordinated after-care such as food, water , tents and medicine and seed for next year’s crop
* reducing deforestation in Nepal

 Some of these ideas have been carried out. However, there has been some criticism of this plan, as to whether it is sustainable, as embankments restrict the channel, affect the fishing industry and increase the height of the rivers. Dams are also expensive and could lead to debt.