

BANGLADESH FACTFILE

Bangladesh is one of the world's most densely populated countries, with its people crammed into a delta of rivers that empties into the Bay of Bengal population density of 1104 per km². Poverty is deep and widespread, but Bangladesh has in recent years reduced population growth and improved health and education.

The low-lying country is vulnerable to flooding and cyclones, and stands to be badly affected by any rises in sea levels.

Storm surges in Bangladesh

Locations that are in the path of tropical cyclones are especially vulnerable to storm surges. Compared to the depressions that affect the UK, tropical cyclones have lower air pressure and stronger winds, resulting in larger storm surge heights.

Bangladesh is especially vulnerable to the impacts of tropical cyclones for a number of reasons:

- Much of the country is a very low-lying river delta, only 1 to 3 m above sea level (Figure 10.17).
- Incoming storm surges often meet outflowing river discharge from the Ganges and Brahmaputra rivers, meaning river flooding and coastal flooding combine.
- Intense rainfall from tropical cyclones contributes to flooding.
- Almost all of the coastline consists of unconsolidated delta sediment, which is very susceptible to erosion.
- Deforestation of coastal mangrove forests has removed vegetation that once stabilised coastal swamps and dissipated wave energy during tropical cyclones.
- The triangular shape of the Bay of Bengal concentrates a cyclone storm surge as it moves north, increasing its height when it makes landfall.

Three major cyclones have struck Bangladesh since 1970, plus many more minor ones. Death tolls have

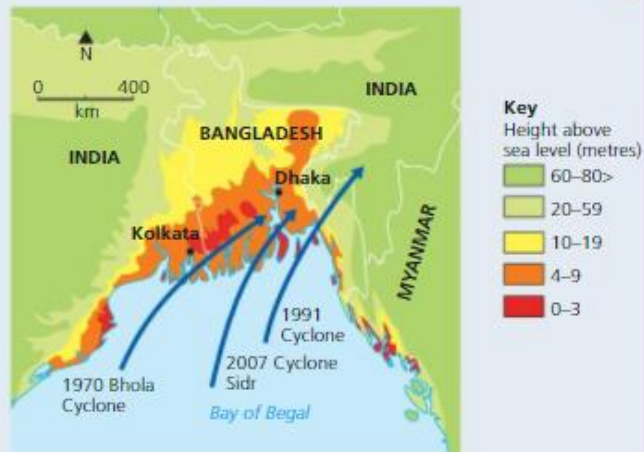


Figure 10.17 Height above sea level in Bangladesh, India and Myanmar

fallen over time because of much-improved warnings, the construction of cyclone shelters and better aid response. However, vast areas are flooded by these storm surges forcing millions of people from their homes and farms in the densely populated coastal areas.

Cyclones in Bangladesh cause many metres of coastal erosion and can reshape whole stretches of coastline. River channels in the delta can shift dramatically, eroding farmland but creating new areas of deposition elsewhere.

The Guardian:

Bangladesh struggles to turn the tide on climate change as sea levels rise

Bangladesh is already one of the most climate vulnerable nations in the world, and global warming will bring more floods, stronger cyclones. At the dry fish yards, close to the airport at the coastal town of Cox's Bazar, women are busy sorting fish to dry in the sun. They say the process, which begins in October, can continue through to February or March if the weather is good.

But Aman Ullah Shawdagor, a dry fish businessman who employs 70 people, says high tides and seasonal changes have hit his business hard. Last year there were four cyclones, more than ever before. In 2015, there was only one.



Scientists predict that, by 2050, as many as 25 million people in Bangladesh will be affected by the rising sea level. Hashem and Shawdagor believe that they are already seeing the effects of a changing climate, however.

Kutubdia

Along the coast lies Kutubdia, an island in the Bay of Bengal where lush green rice fields give way to acres and acres of flat fields. Consisting of small rectangles of varying hues of brown, they are salt fields. The encroachment of saline water from rising tides has made rice farming impossible.



Abdus Shukur, 50, a former agricultural farmer, says he learned to farm salt 10 years ago, when sea water flooded the land he rents. It took him six months to learn the craft and he finds it back-breaking work.

“I was an agricultural farmer before,” says Shukur. “But the embankment broke down and saline water came on to the land. We had no choice but to adapt.”

What does the future hold?

Bangladesh is giant delta and flood plain. It is made of unconsolidated alluvium (sand and mud washed down from the rivers). This makes building sea defences very difficult as the unstable land means that building foundations is extremely difficult.