Section IV

Climate Impacts

Climate Extremes and Storms

- The UNDP identifies Bangladesh as the most climate vulnerable country to tropical cyclones and the sixth most vulnerable country to floods.
- Every 3 years a severe tropical cyclone hits Bangladesh.
- The resulting storm surge is up to 7 meters high.
- See Bangladesh Climate Change Strategy for maps, charts, and pictures.

Floods

- Most of Bangladesh lies in the delta of three of the largest rivers in the world – the Brahmaputra, the Ganges and the Meghna, with a combined peak discharge in the flood season of 180,000 m /sec. (the second highest in the world after the Amazon) and carry about two billion tonnes of sediment each year.
- The topography of the country is mostly low and flat, making it susceptible to river and rainwater flooding and, in lower lying coastal areas, to tidal flooding during storms.
- During an average year, about one quarter of the country is underwater, thus hampering the ability to cultivate many crops and forcing farmers to switch to other agricultural practices such as rice cultivation or shrimp farming.

Droughts

- Droughts most commonly affect the northwestern region, which generally has lower rainfall than the rest of the country.
- Droughts are seasonal and can vastly devastate crops.
- In these areas, monga(unemployment leading to seasonal hunger) is often a problem, especially in the months leading up to the November-December rice harvest.

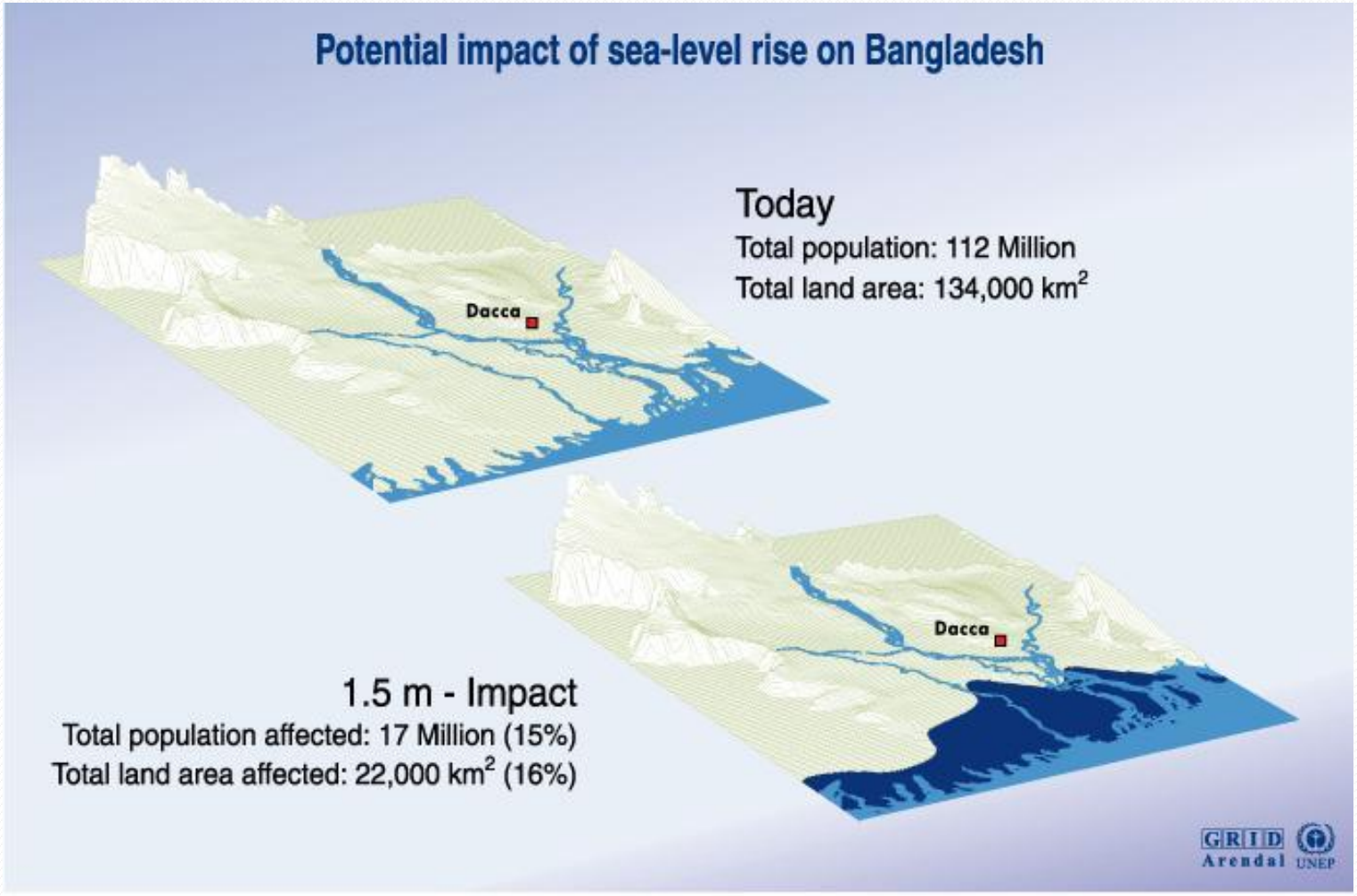
Impacts of Climate Change

- Increasingly frequent and severe tropical cyclones with higher wind speeds and storm surges leading to more damage in the coastal region
- Heavier and more erratic rainfall in the Ganges-Brahmaputra-Meghna system, including Bangladesh during the monsoon resulting in :
  - higher river flows
  - river bank erosion
  - increased sedimentation
- Lower and more erratic rainfall resulting in:
  - increasing droughts, especially in drier northern and western regions of the country

Impacts of Climate Change

- Sea level rises leading to :
  - Submergence of low-lying coastal areas
  - Saline water intrusion up coastal rivers and into groundwater aquifers
  - Reduced freshwater availability
  - Damage to the Sundarbans mangrove forest
  - Loss of biodiversity in Sundarbans
  - Drainage congestion inside coastal polders, damaging agriculture
  - Loss of the ability to shrimp farm
- Melting of the Himalayan glaciers leading to:
  - Higher river flows in the warmer months of the year
  - Lower river flows and increased saline intrusion after the glaciers have shrunk or disappeared

Potential Impact of Sea-Level Rise



Source : UNEP/GRID Geneva; University of Dacca; JRO Munich; The World Bank; World Resources Institute, Washington D.C.

Impacts of Climate Change

- Agriculture
  - Every single change is adversely affect agriculture (crops, livestock, fisheries, etc.)
  - Although agriculture only accounts for 20% of total GDP, over 60% of the population directly or indirectly depend on agriculture for their subsistence.
- Food Security
  - People living along river banks and coastlines (fishing families) are some of the poorest in the country. They will be seriously affected by changes in sea level, sedimentation, erosion, flooding, and saline intrusion.

Impacts of Climate Change

- Safe Drinking Water Shortages
  - This is become worse in the coastal belt and areas prone to drought in the north west.
  - This is effect women more so than men due to their responsibilities of collecting drinking water, caring for children, bearing children, etc.
- River Bank Erosion and Saltwater Intrusion
  - This will displace hundreds of thousands of people who will have to migrate to large cities in search of new homes, food, and jobs.
  - If the sea level rises higher than currently predicted and new coastal polders are not rebuilt, 6 to 8 million people could be displaced by 2050.

Health and Well-Being

- The incidence of water-borne and air-borne diseases will heavily increase with heavier flooding, stronger storms, and torrential rainfall.
- Bacteria, parasites and disease vectors will breed faster in warmer, wetter conditions and will spread quicker in densely populated areas with poor sanitation and drainage.
- Increases in daily temperatures will increase the number of heat-related summer death, while decreasing the instance of winter-related deaths.