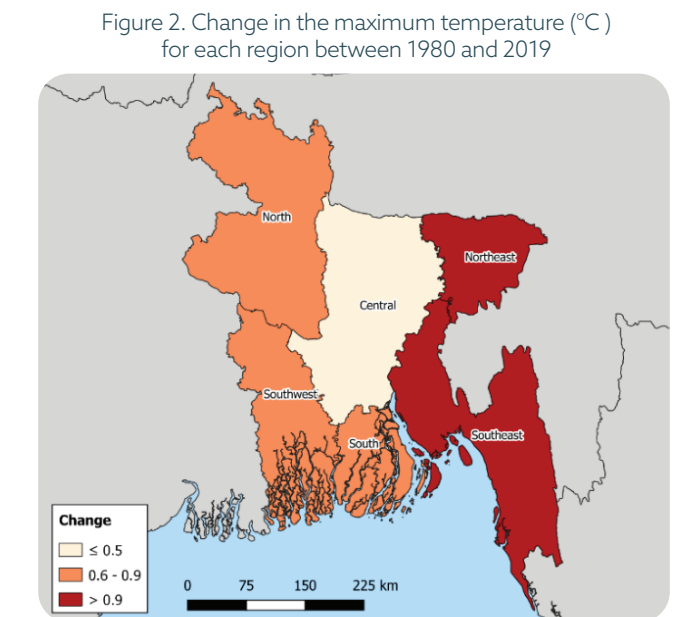
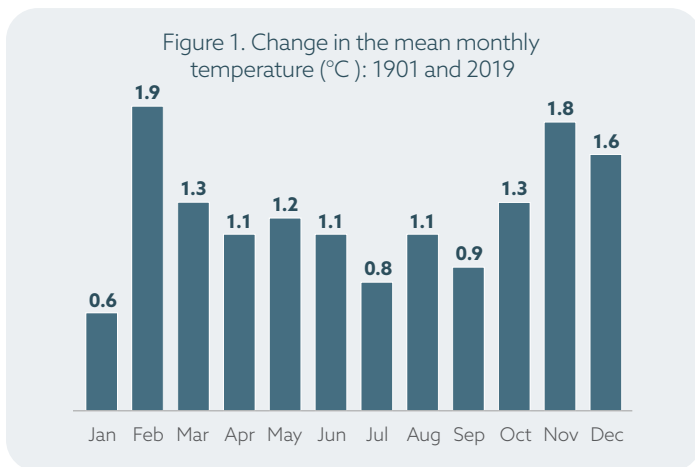




HOTTER AND MORE HUMID WITH ERRATIC RAINFALL: CLIMATE CHANGE IN BANGLADESH

CHANGING CLIMATE, DISAPPEARING SEASONALITY

Bangladesh is associated with having six seasons; however, with the effects of climate change becoming more pronounced, the distinct features of these seasons are becoming increasingly blurred. Summers are hotter and longer in 2019 compared to 1901 (figure 1). The temperatures between March to October have increased by 0.8°C to 1.3°C over this period. Similarly, the winters are shorter and warmer, with average temperature rising between 1.6°C to 1.9°C in November and December between 2019 and 1901 (figure 1). Monsoon is spreading out over a longer period, extending from February to October.

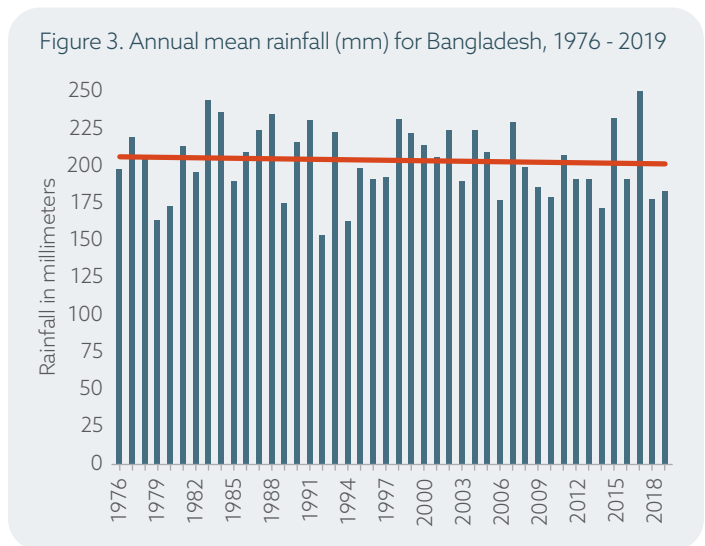


TEMPERATURE IS ON THE RISE

- Bangladesh has become hotter with a 0.5°C increase in mean temperature between 1976 and 2019. Temperature in the eastern side increased by 0.9°C compared to 0.6°C to 0.9°C in the west and less than 0.5°C in the central region (figure 2).
- Changes in temperature depict a different pattern for Dhaka and Chattogram, the two major metropolises in Bangladesh. Maximum temperature in Dhaka increased by 0.5°C whereas the increase for Chattogram was 0.9°C between 1980 and 2019.

RAINFALL: NO MAJOR CHANGE, BUT...

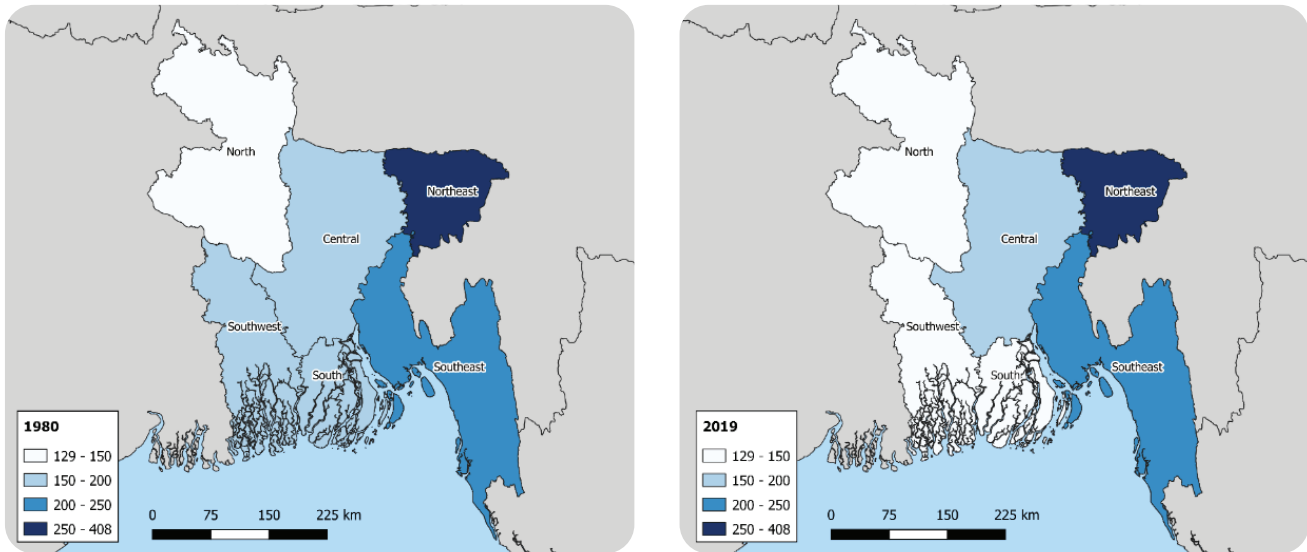
- Although the overall trend for rainfall shows little change between 1976 and 2019 as seen by the red trend line in Figure 3, there are significant variations between the years.
- For the peak monsoon season from June to August – average monthly mean rainfall has declined by approximately 60 mm, while mean monthly rainfall for September and October have increased by 43 mm, between 1901 and 2019.
- Over time, the southern region of Bangladesh is becoming drier with the rainfall declining from an average of 175mm to 140mm between 1980 and 2019 (figure 4).
- Chattogram has experienced higher rainfall than Dhaka between 1976 and 2019.



SOME PARTS ARE MORE HUMID

- North, Northeast, and South of Bangladesh are becoming more humid over time, and in 2019 humidity levels were equal to or more than 80 percent in these regions (figure 5).
- Changes in humidity in Dhaka and Chattogram are significantly different. While in Dhaka, average monthly humidity is declining, in Chattogram it is increasing during summer, especially in June and July.

Figure 4: Rainfall (in mm) patterns across the country, 1980 (left) and 2019 (right)



FUTURE CLIMATE CHANGES

- Mean temperatures across Bangladesh are projected to increase by 1.4°C around 2050 and 2.4°C by 2100. Annual rainfall will rise by 74 mm by 2040–2059.
- If global warming progresses toward a 4°C increase scenario — the worst-case scenario presented at the 2015 Paris Climate Change Conference of Practitioners — the deleterious effects on human physical and mental health, among other effects, are likely to escalate.

Figure 5: Relative humidity (in %) in Bangladesh, 1980 (left) and 2019 (right)

