Droughts in Bangladesh are influenced by both temperature and rainfall patterns, with significant variability across different regions. The relationship between these two climatic factors is key in understanding drought occurrences.

* **Temperature**: Bangladesh experiences high temperatures, especially during the pre-monsoon and post-monsoon seasons. On average, temperatures exceed 35°C for around 70 days per year, and in some instances, they can surpass 40°C, as seen in the prolonged heatwave of 2023. These high temperatures contribute to the evaporation of water, which can exacerbate the effects of a lack of rainfall and lead to drought conditions in the northern and northwestern parts of the country, which are particularly vulnerable to dry spells​  
  [PLOS](https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0292668)​  
  [ICCCAD](https://icccad.net/wp-content/uploads/2024/02/Bangladesh_Final_Covers_26-Jan-2024_ONLINE_compressed.pdf).
* **Rainfall**: Rainfall in Bangladesh is highly seasonal, with heavy monsoon rains typically occurring between June and September. However, rainfall distribution can be erratic, with some areas experiencing irregular or insufficient rainfall. For instance, in the north-western regions, which are prone to droughts, rainfall can be significantly lower, contributing to water shortages during the dry months. The lack of sufficient rainfall, especially in areas dependent on agriculture, can lead to crop failure, water scarcity, and other environmental stresses​  
  [PLOS](https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0292668).

In general, the combination of rising temperatures and insufficient or uneven rainfall significantly affects agricultural production, particularly in rice cultivation, which is sensitive to both these climatic parameters. Therefore, understanding these factors and their trends is essential for predicting and mitigating drought risks in Bangladesh, as well as for implementing adaptation strategies in vulnerable areas​

[ICCCAD](https://icccad.net/wp-content/uploads/2024/02/Bangladesh_Final_Covers_26-Jan-2024_ONLINE_compressed.pdf)

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For a more detailed study, research methods such as regression models and climatic trend analysis have been used to assess the impacts of these changes on agriculture and livelihoods in Bangladesh​

[PLOS](https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0292668)

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