



DISTRICT WISE CLIMATE CHANGE INFORMATION FOR THE STATE OF TAMIL NADU RAINFALL PROJECTIONS FOR CHENNAI



1.1 About Chennai

The **Chennai district** formerly known as Madras district is the smallest of all districts in the State, but has the highest human density. Chennai district covers an area of 178.2 km² located on the Eastern Coastal Plains of India. It lies between 12°59' and 13°9' of the Northern latitude and 80°12' and 80°19' of the Eastern longitude at an average altitude of 6 meters above sea level on a 'sandy shelving breaker swept' beach.^{1,2,3}

1.2 Climate of Chennai

Chennai gets most of its seasonal rainfall from the Northeast monsoon winds, from mid–October to mid–December. Cyclones in the Bay of Bengal sometimes hit the city. The highest annual rainfall recorded is 257 cm in 2005. Prevailing winds in Chennai are usually southwesterly between April and October and northeasterly during the rest of the year. Historically, Chennai has relied on annual monsoon rains to replenish water reservoirs, as no major rivers flow through the area.^{3,4}

1.3 Rainfall projections for Chennai

The annual rainfall normal (1970-2000) of Chennai district is 1298 mm.⁵ The annual rainfall projection for the periods 2010-2040 (2020s), 2040-2070 (2050s) and 2070-2100 (2080s) indicate a general decrease of **0.1%**, **5.0%** and **1.0%** respectively with respect to the baseline (1970 -2000).

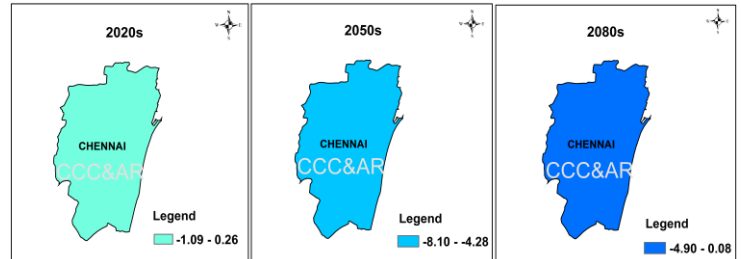


Fig 1.1 Percent change in Annual Rainfall for the period 2020s, 2050s and 2080s

Table 1.1 Percent change in Annual Rainfall

Parameter	2020s	2050s	2080s
Annual Rainfall	-0.1%	-5.0%	-1.0%

1.4 Key Findings

The annual rainfall for Chennai may reduce by **1.0%** by the end of the century as per the emission scenario of A1B.

1.5 References

1. <http://www.chennai.tn.nic.in/chndistprof.htm>
2. <http://www.chennai.climatemps.com/>
3. ENVIS 2015. Chennai District. ENVIS Centre Tamilnadu, Available at tnenvis.nic.in/files/CHENNAI.pdf
4. Central Ground Water Board 2009. District groundwater brochure Vellore district, Tamil nadu. Central Ground Water Board South Eastern Coastal Region, Chennai. Available at cgwb.gov.in/District_Profile/TamilNadu/chennai.pdf
5. IMD, 2013. Rainfall of Chennai District. Regional Meterological Centre, Chennai.