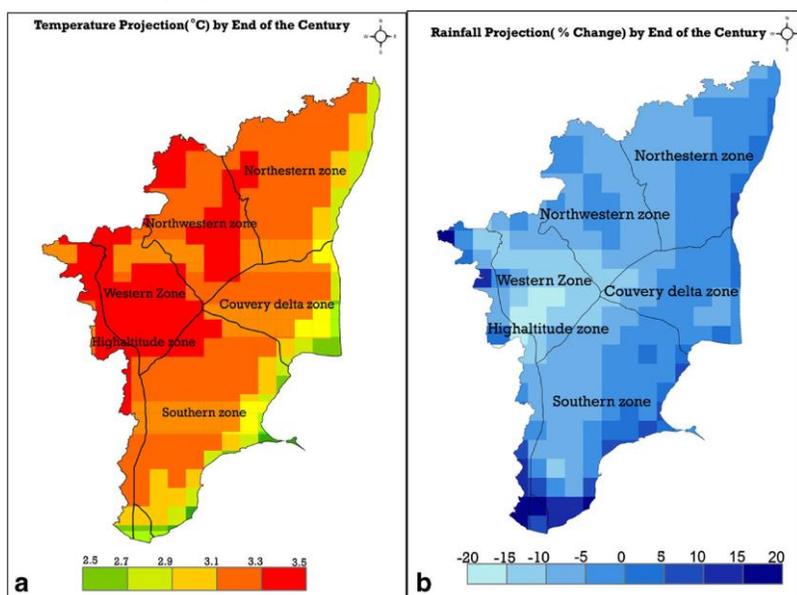


Climate Change Projections of Tamil Nadu

The regional climate change projections for the Tamil Nadu state simulated by the Met Office Hadley Centre regional climate model PRECIS, using HadCM3Q model under A1B scenario indicated the general increase in maximum and minimum temperature and decrease in rainfall over Tamil Nadu by end of the century. The increase in maximum temperature would be 1.0, 2.2 and 3.1 °C for the periods 2020s (2005–2035), 2050s (2035–2065) and 2080s (2065–2095), respectively, with respect to baseline period (1970–2000). Similarly, the projections of minimum temperature showed an increase of 1.1, 2.4 and 3.5 °C, for the periods 2020s (2005–2035), 2050s (2035–2065) and 2080s (2065–2095) with respect to baseline period (1970–2000). For the whole state, projections indicated warmer summers, maximum temperature increasing by about 3.1 °C with a general maximum increase of 3.3–3.5 °C over western zone and minimum temperature by about 3.5 °C. The minimum temperature projections consistently show higher values when compared to maximum temperature. With a difference ranging from 0.2 to 0.5 °C for different projections. At the same time, the annual rainfall projections for the same periods



indicated a general decrease in rainfall of about 2–7, 1–4 and 4–9 %, respectively. However, significant exceptions were noticed over some pockets of western hilly areas and high rainfall areas where increases in rainfall are seen. There were also indications of increasing heavy rainfall events during the northeast monsoon season and a slight decrease during the southwest monsoon season

Fig. a) Average change in annual mean max. temp (°C) and b) annual rainfall projections by the end of the century in a spatial scale (agro-climatic zone-wise)

Source: Bal, P.K., Ramachandran, A., Geetha, R., Bhaskaran, B., Thirumurugan, P., Indumathi, J. and Jayanthi, N., 2016. **Climate change projections for Tamil Nadu, India: deriving high-resolution climate data by a downscaling approach using PRECIS.** *Theoretical and applied climatology*, 123(3-4), pp.523-535.