

6.3.2 Bangalore

The GHG emissions of Bangalore was 1.5 MtCO₂e in 1975, that escalated to 3.6 MtCO₂e in 1990 and 10.2 MtCO₂e in 2015. A majority of the GHG emissions in 2015 (Figure 6.4, top) were contributed by the industry sector (54%) and transport sector (24%), followed by residential sector (16%) and energy sector (6%). As per the ICLAP model estimates (Figure 6.4, bottom), there would be an increase in emissions at 4.9% per annum, leading to 12.6 MtCO₂e in 2030 and 16.4 MtCO₂e in 2050.

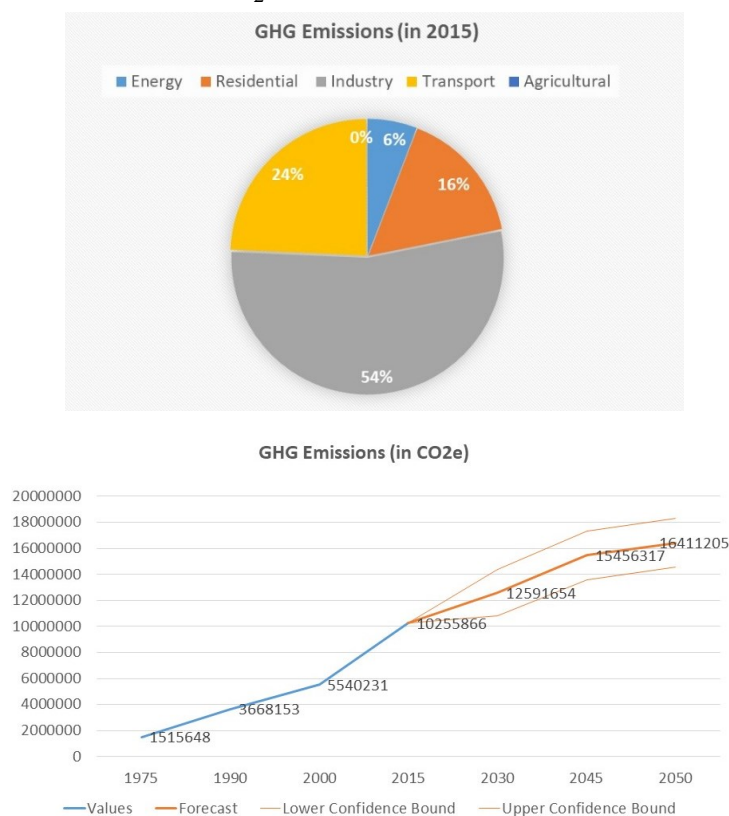


Figure 6.4: GHG contributions from different sectors in Bangalore (top); ICLAP model estimates for Bangalore's GHG emissions till 2050 (bottom)

The results for climate variability in Bangalore indicate that depending on the emission scenarios, there will be a temperature increase of 0.3–2.4 degC from 2030-80s (Figure 6.5, top). The scenario corresponding to the pathway with moderate GHGs (SSP245_MIROC6) exhibits an increase of 0.5 degC during 2030s (above the 1980 baseline temperature), maintaining 0.5 degC in 2050s, peaking to 1.3 degC during 2080s. The spatial results for moderate scenario over 2010-80s are mapped in Figure 6.5 (middle). Meanwhile, the scenario corresponding to the pathway with the highest GHGs (SSP585_MIROC6) exhibits an increase of 0.3 degC during 2030s (above the 1980 baseline temperature), 1.2 degC in 2050s further rising to 2.0 degC above normal up to 2080s. The spatial results for high emission scenario over 2010-80s are mapped in Figure 6.5 (bottom). Meanwhile, the precipitation change for Bangalore shows a high variability in the long run, ranging from 0 to 200 mm from the normal (Figure 6.6, top) depending on the emission scenarios. The scenario corresponding to the pathway with moderate GHGs (SSP245_MIROC6) exhibits an increase of about 50 mm during 2030s (above the 1980 baseline rainfall), increasing to 40 mm in 2050s and rising to 90 mm during 2080s. The spatial results for moderate scenario over 2010-80s are mapped in Figure 6.6 (middle). Meanwhile, the scenario

corresponding to the pathway with the highest GHGs (SSP585_MIROC6) shows Bangalore's city rainfall around 20 mm (above the 1980 baseline rainfall) during 2030s, rising up to 200 mm in 2050s, re-escalating to about 300 mm in 2080s. The spatial results for high emission scenario over 2010-80s are mapped in Figure 6.6 (bottom).

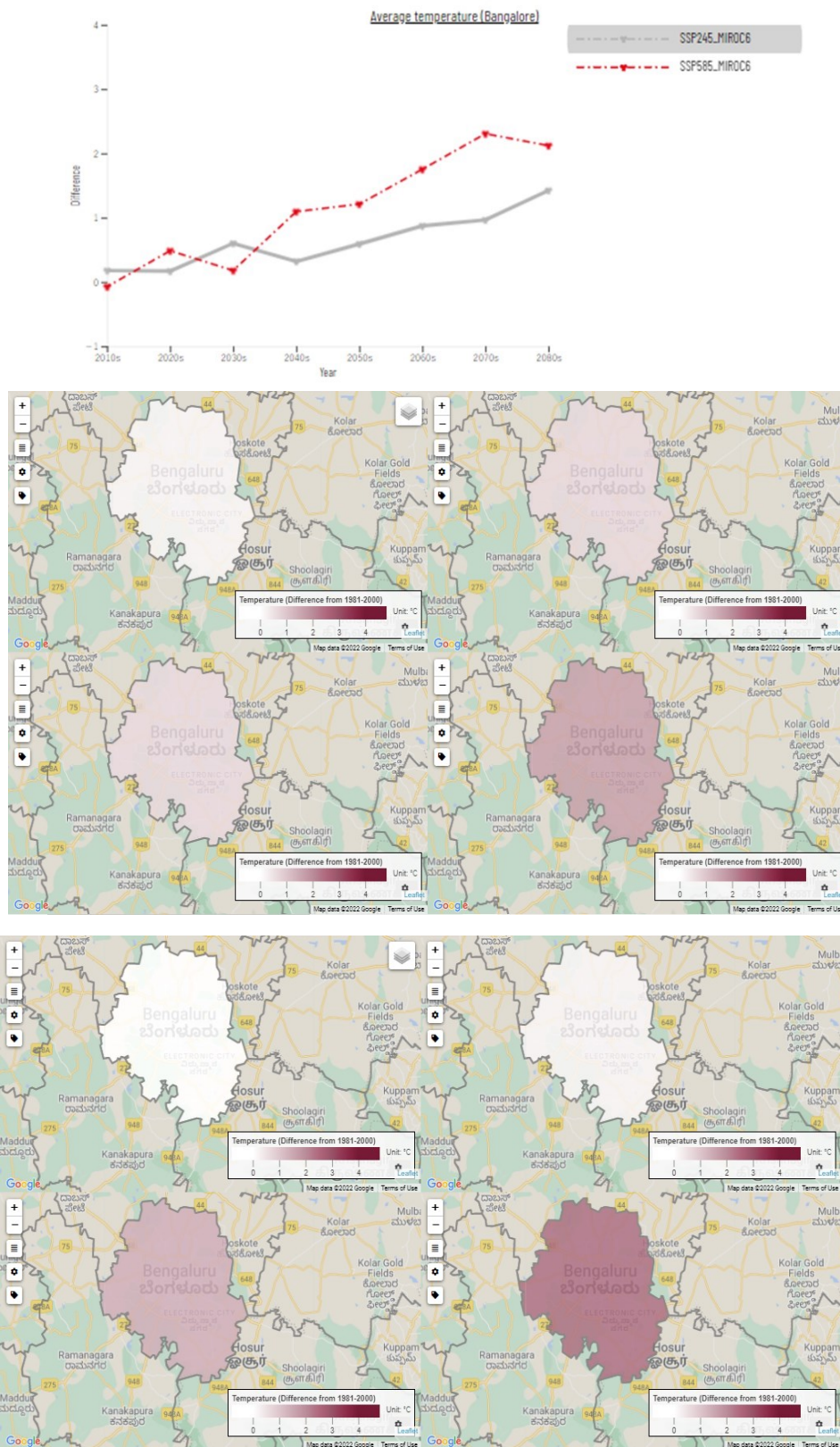


Figure 6.5: Temperature increase in Bangalore under medium (grey) and high (red) emission scenario till 2080s (top); Spatial results for medium scenario for, 2030s, 2050s, 2080s (middle); Spatial results for high scenario for, 2030s, 2050s, 2080s (bottom)

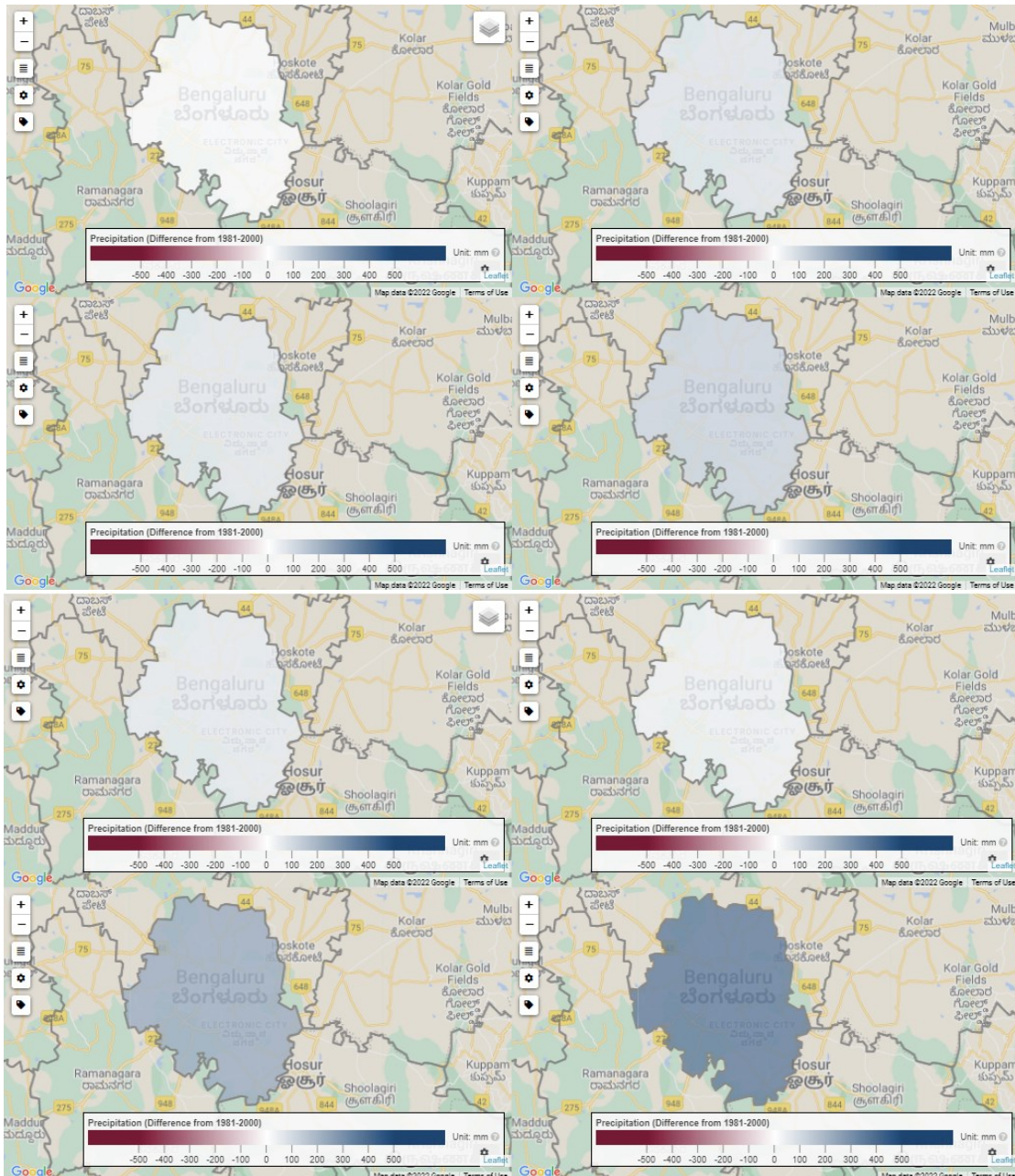
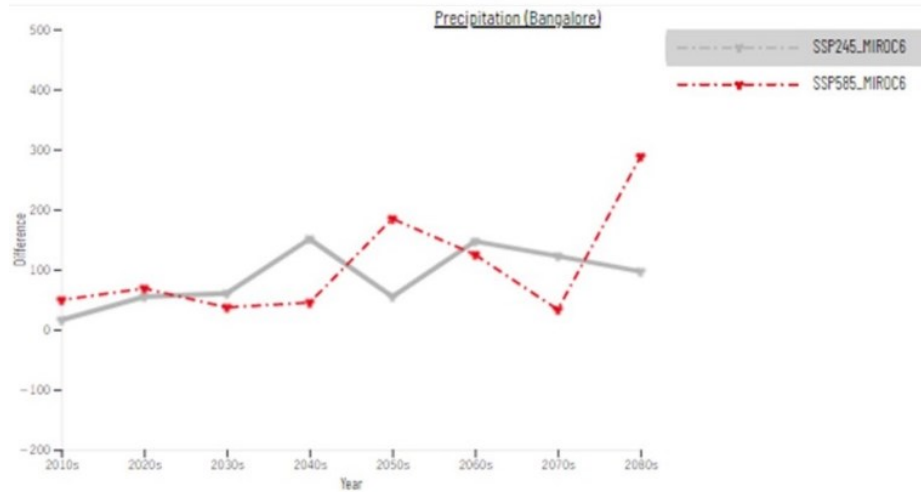


Figure 6.6: Precipitation variation in Bangalore under medium (grey) and high (red) emission scenario till 2080s (top); Spatial results for medium scenario for, 2030s, 2050s, 2080s (middle); Spatial results for high scenario for, 2030s, 2050s, 2080s (bottom)