

5.3.3 Chongqing

The GHG emissions of Chongqing was 12.1 MtCO_{2e} in 1975, that escalated to 14.8 MtCO_{2e} in 1990 and 46.4 MtCO_{2e} in 2015. A majority of the GHG emissions in 2015 (Figure 5.7, top) were contributed by the industry sector (48%) and energy sector (31%), followed by residential sector (11%) and transport sector (10%). As per the ICLAP model estimates (Figure 5.7, below), there would be an increase in emissions at 3.4% per annum, leading to 52.8 MtCO_{2e} in 2030 and 67.7 MtCO_{2e} in 2050.

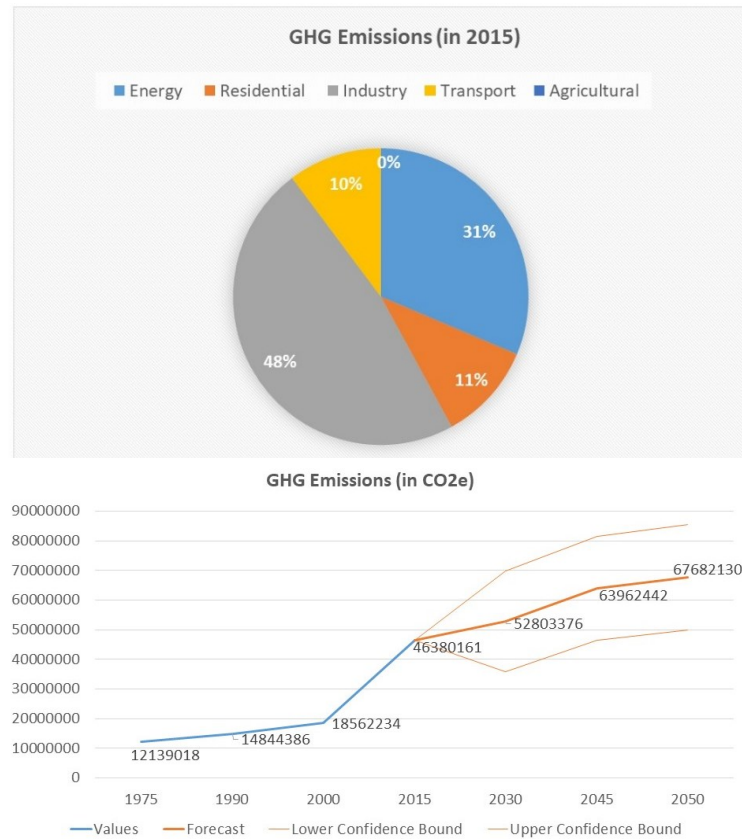


Figure 5.7: GHG contributions from different sectors in Chongqing (top); ICLAP model estimates for Chongqing GHG emissions till 2050 (bottom)

The results for climate variability in Chongqing indicate that depending on the emission scenarios, there would be a temperature increase of 1.4–4.4 degC from 2030–80s (Figure 5.8, top). The moderate GHGs scenario (SSP245_MIROC6) exhibits an increase of 1.4 degC in 2030s (above the 1980 baseline temperature), 2.1 degC in 2050s, peaking to 2.5 degC in 2080s. The spatial results for moderate scenario over 2010–80s are mapped in Figure 5.8 (middle). Meanwhile, the scenario corresponding to the pathway with the highest GHGs (SSP585_MIROC6) exhibits an increase of 1.5 degC in 2030s (above the 1980 baseline temperature), 2.7 degC in 2050s further rising to 4.4 degC above normal up to 2080s. The spatial results for high emission scenario over 2010–80s are mapped in Figure 5.8 (bottom). Meanwhile, the precipitation change for Chongqing shows high variability in the long run, ranging from 45 to 175 mm from the normal (Figure 5.9, top) depending on the emission scenarios. The scenario corresponding to the pathway with moderate GHGs (SSP245_MIROC6) exhibits an increase of about 70 mm in 2030s (above the 1980 baseline rainfall), increasing to 90 mm in 2050s, dipping to 50 mm in 2060s and rising again to 130 mm in 2080s. The spatial results for moderate scenario over 2010–80s are mapped in Figure 5.9 (middle). Meanwhile, the scenario corresponding to the pathway with the highest GHGs

(SSP585_MIROC6) shows Chongqing's city rainfall increase to around 45 mm (above the 1980 baseline rainfall) in 2030s, rising up to 85 mm in 2050s, increasing to 175 mm in 2070s, dipping to about 50 mm in 2080s. The spatial results for high emission scenario over 2010-80s are mapped in Figure 5.9 (bottom).

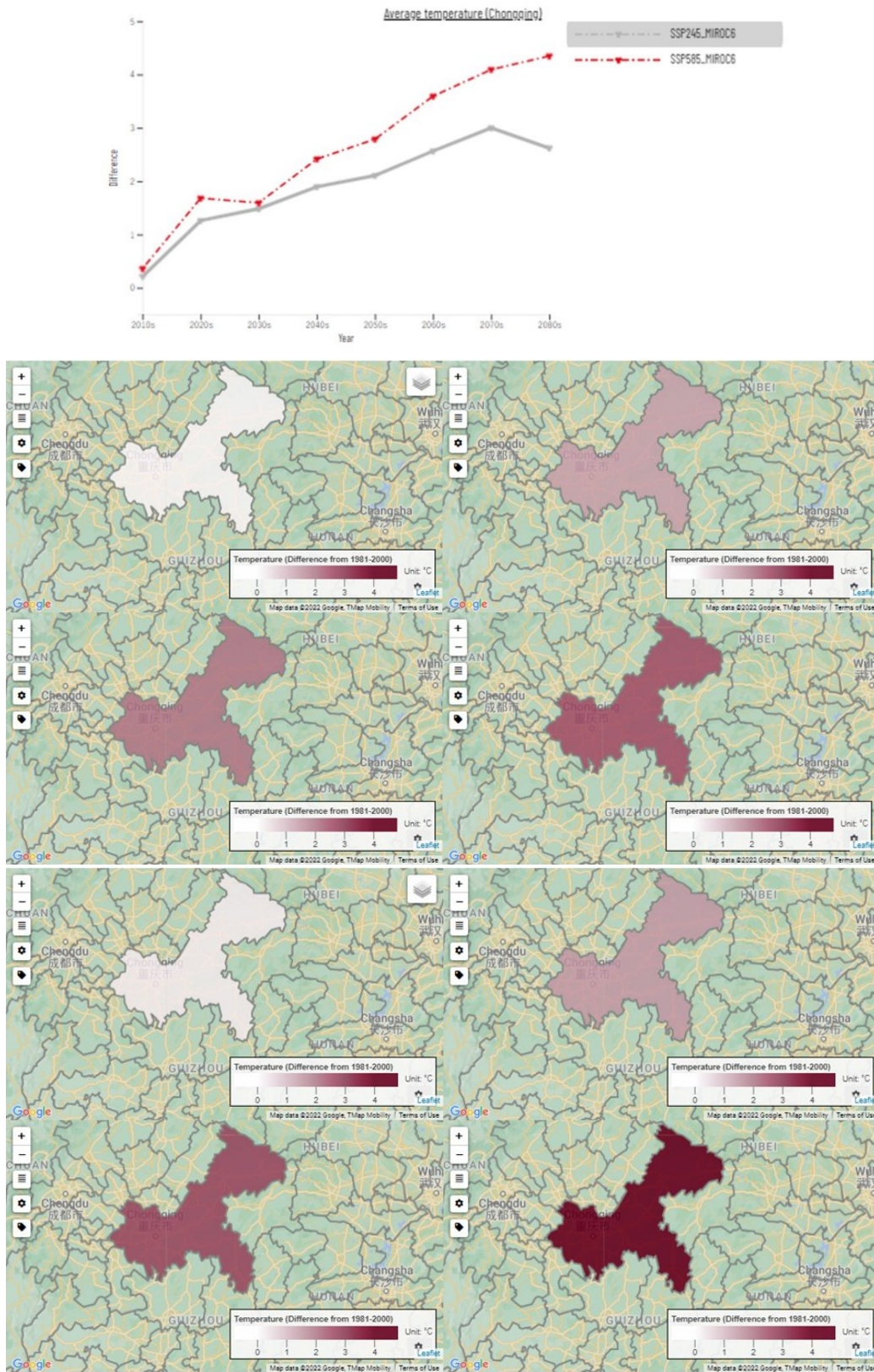


Figure 5.8: Temperature increase in Chongqing under medium (grey) and high (red) emission scenario till 2080s (top); Spatial results for medium scenario for 2010s, 2030s, 2050s, 2080s (middle); Spatial results for high scenario for 2020s, 2030s, 2050s, 2080s (bottom)

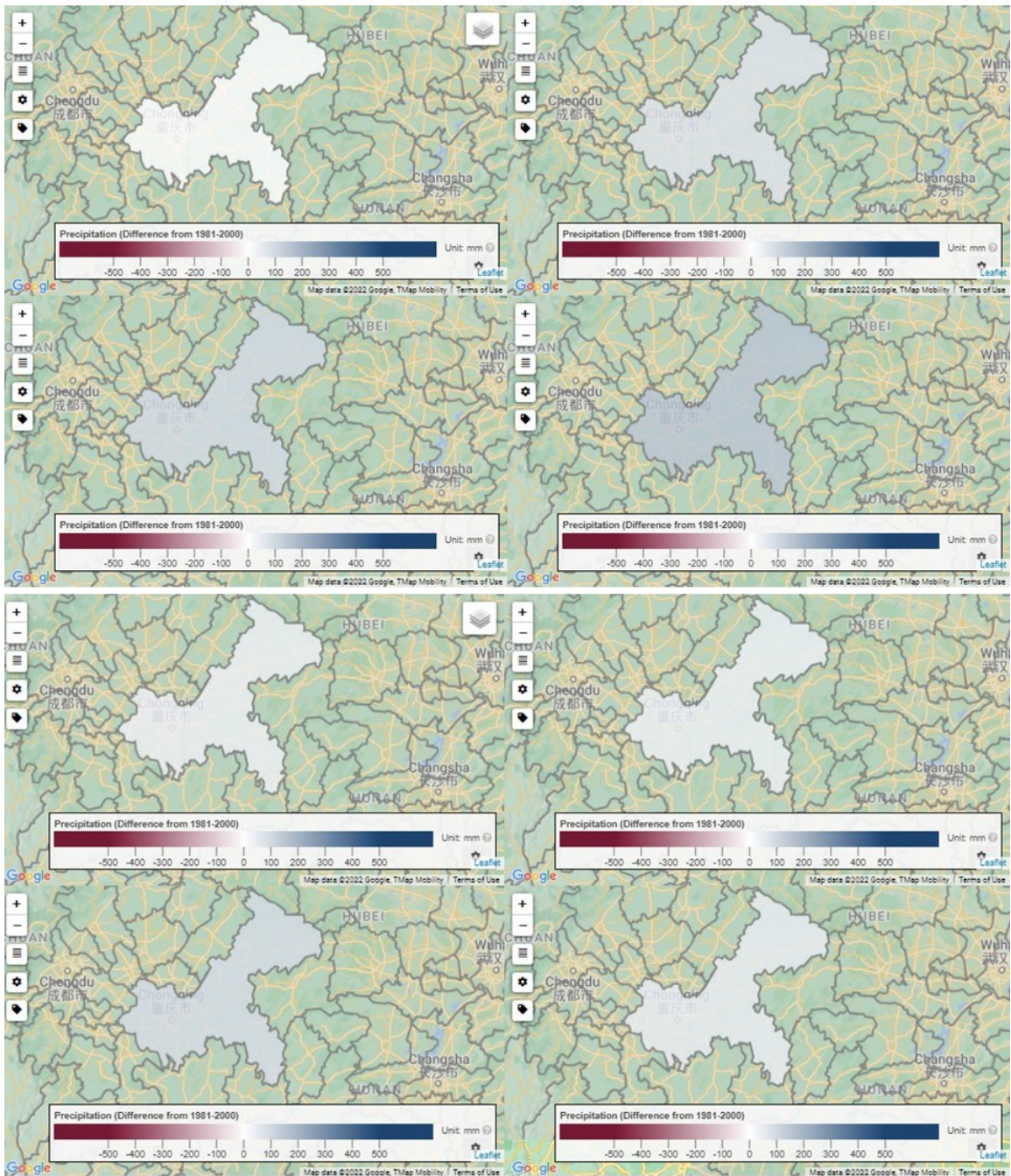
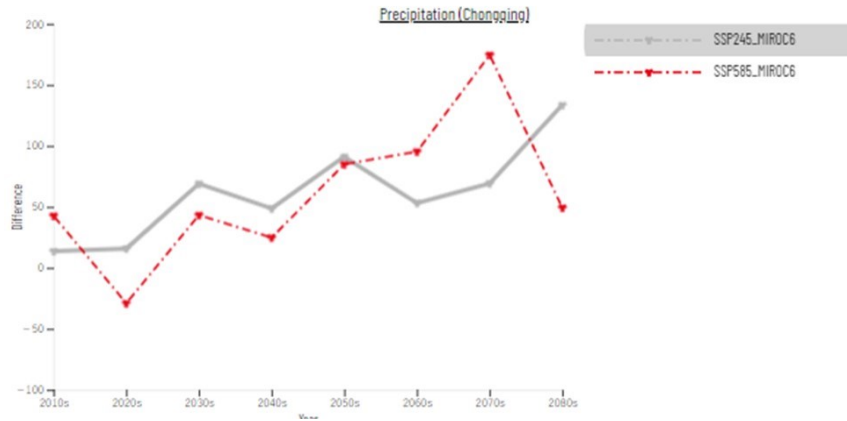


Figure 5.9: Precipitation variation in Chongqing under medium (grey) and high (red) emission scenario till 2080s (top); Spatial results for medium scenario for 2010s, 2030s, 2050s, 2080s (middle); Spatial results for high scenario for 2020s, 2030s, 2050s, 2080s (bottom)