5.3.17 Suzhou

The GHG emissions of Suzhou was 5.5 $MtCO_2e$ in 1975, that escalated to 17.3 $MtCO_2e$ in 1990 and 87.4 $MtCO_2e$ in 2015. A majority of the GHG emissions in 2015 (Figure 5.49, top) were contributed by the energy sector (60%) and industry sector (27%), followed by transport sector (8%) and residential sector (5%). As per the ICLAP model estimates (Figure 5.49, below), there would be an increase in emissions at 7.1% per annum, leading to 105.6 $MtCO_2e$ in 2030 and 141.4 $MtCO_2e$ in 2050.

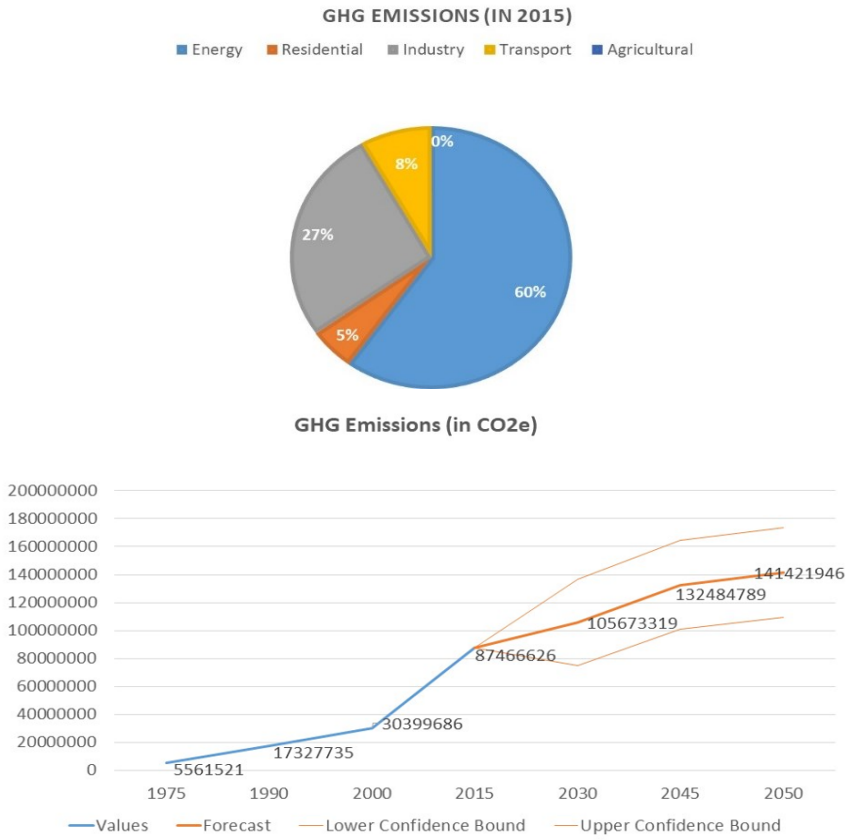

Figure 5.49: GHG contributions from different sectors in Suzhou (top); ICLAP model estimates for Suzhou's GHG emissions till 2050 (bottom)

The results for climate variability in Suzhou indicate that depending on the emission scenarios, there would be a temperature increase of 1.5–4.0 degC from 2030-80s (Figure 5.50, top). The scenario corresponding to the pathway with moderate GHGs (SSP245_MIROC6) exhibits an increase of 1.2 degC during 2030s (above the 1980 baseline temperature), 1.8 degC in 2050s, peaking to 2.3 degC during 2080s. The spatial results for moderate scenario over 2010-80s are mapped in Figure 5.50 (middle). Meanwhile, the scenario corresponding to the pathway with the highest GHGs (SSP585_MIROC6) exhibits an increase of 1.7 degC during 2030s (above the 1980 baseline temperature), 2.5 degC in 2050s further rising sharply to 3.8 degC above normal up to 2080s. The spatial results for high emission scenario over 2010-80s are mapped in Figure 5.50 (bottom). Meanwhile, the precipitation change for Suzhou shows high variability in the long run, ranging from -30 to 180 mm from the normal (Figure 5.51, top) depending on the emission scenarios. The scenario corresponding to the pathway with moderate GHGs (SSP245_MIROC6) exhibits an increase of about 20 mm during 2030s (above the 1980 baseline rainfall), increasing to 100 mm in 2050s and dipping to 90 mm during 2080s. The spatial results for moderate

scenario over 2010-80s are mapped in Figure 5.51 (middle). Meanwhile, the scenario corresponding to the pathway with the highest GHGs (SSP585_MIROC6) shows Suzhou's city rainfall increase to around -30 mm (above the 1980 baseline rainfall) during 2030s, rising up to 160 mm in 2050s, further increasing unevenly to about 180 mm in 2080s. The spatial results for high emission scenario over 2010-80s are mapped in Figure 5.51 (bottom).

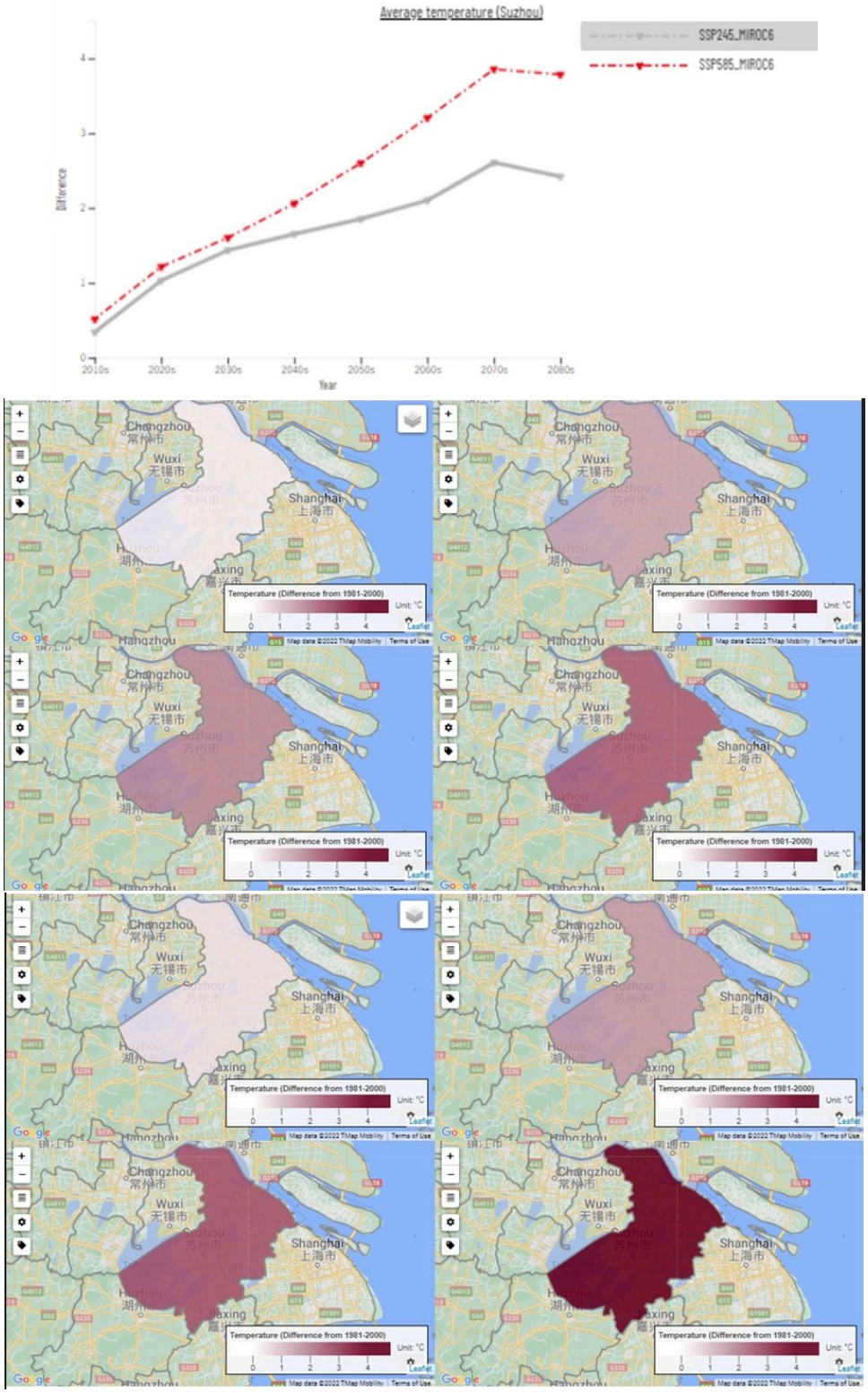

Figure 5.50: Temperature increase in Suzhou under medium (grey) and high (red) emission scenario till 2080s (top); Spatial results for medium scenario for 2010s, 2030s, 2050s, 2080s (middle); Spatial results for high scenario for 2020s, 2030s, 2050s, 2080s (bottom)

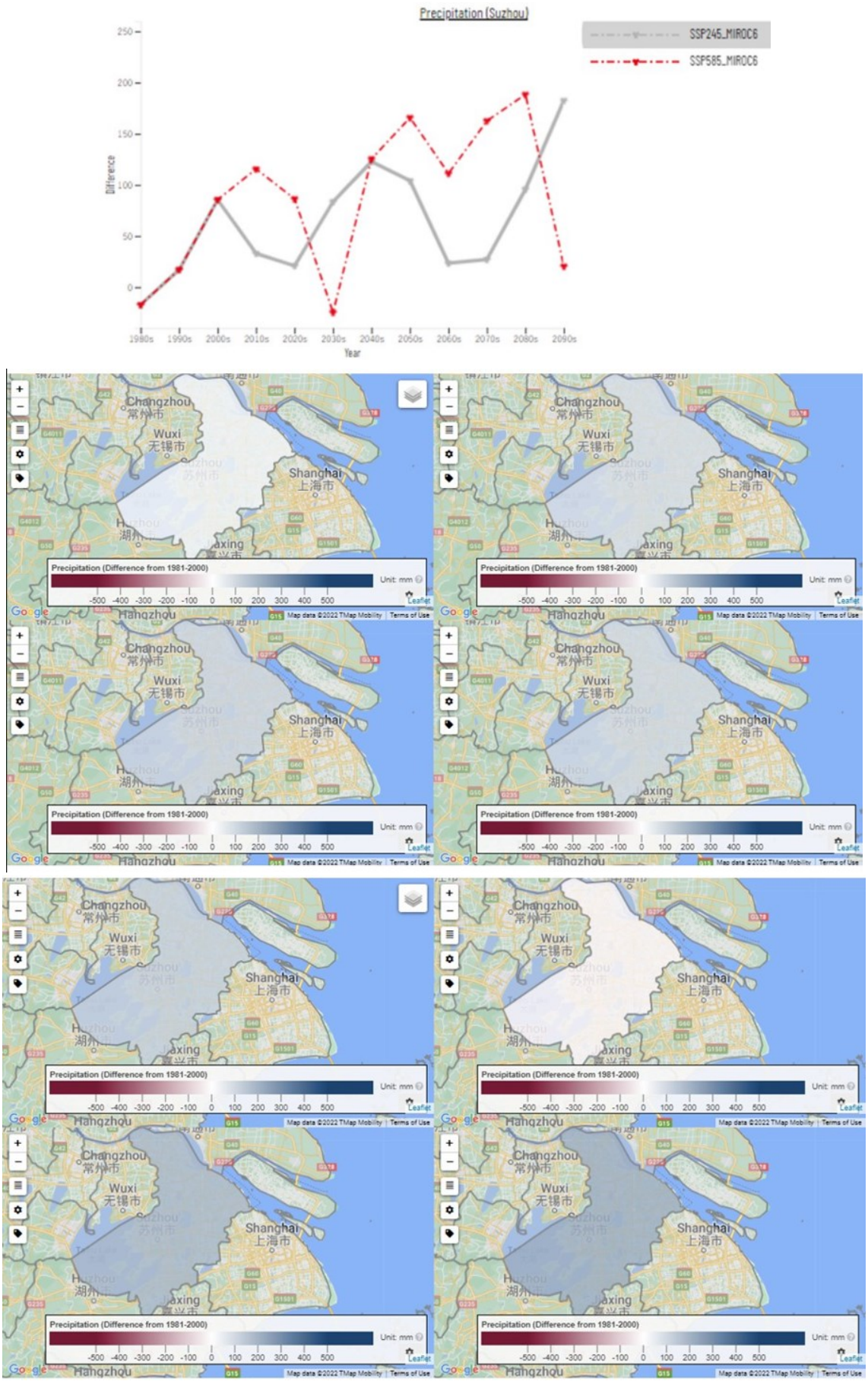

Figure 5.51: Precipitation variation in Suzhou under medium (grey) and high (red) emission scenario till 2080s (top); Spatial results for medium scenario for 2010s, 2030s, 2050s, 2080s (middle); Spatial results for high scenario for 2020s, 2030s, 2050s, 2080s (bottom)