8.3.4 Ho Chi Minh City

The GHG emissions of Ho Chi Minh was 1.2 $MtCO_2e$ in 1975, that escalated to 4.9 $MtCO_2e$ in 1990 and 24.7 $MtCO_2e$ in 2015. A majority of the GHG emissions in 2015 (Figure 8.10, top) were contributed by the industry sector (61%) and energy sector (15%), followed by transport sector (14%) and residential sector (10%). As per the ICLAP model estimates (Figure 8.10, below), there would be an increase in emissions at 7.8% per annum, leading to 31.3 $MtCO_2e$ in 2030 and 41.9 $MtCO_2e$ in 2050.

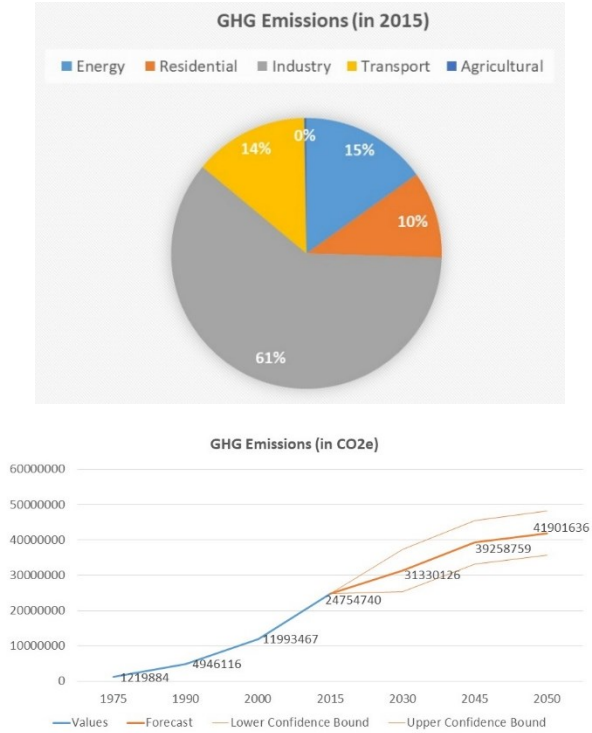

Figure 5.1: GHG contributions from different sectors in Ho Chi Minh (top); ICLAP model estimates for Ho Chi Minh's GHG emissions till 2050 (bottom)

The results for climate variability in Ho Chi Minh indicate that depending on the emission scenarios, there would be a temperature increase of 0.2–2.5 degC from 2030-80s (Figure 8.11, top). The scenario corresponding to the pathway with moderate GHGs (SSP245_MIROC6) exhibits an increase of 0.4 degC during 2030s (above the 1980 baseline temperature), 0.6 degC in 2050s, peaking to 1.4 degC during 2080s. The spatial results for moderate scenario over 2010-80s are mapped in Figure 8.11 (middle). Meanwhile, the scenario corresponding to the pathway with the highest GHGs (SSP585_MIROC6) exhibits an increase of 0.2 degC during 2030s (above the 1980 baseline temperature), 1.1 degC in 2050s further rising sharply to 2.5 degC above normal up to 2080s. The spatial results for high emission scenario over 2010-80s are mapped in Figure 8.11 (bottom). Meanwhile, the precipitation change for Ho Chi Minh shows a very high variability in the long run, ranging from 160 to 400 mm from the normal (Figure 8.12, top) depending on the emission scenarios. The scenario corresponding to the pathway with moderate GHGs (SSP245_MIROC6) exhibits an increase of about 340 mm during 2030s (above the 1980 baseline rainfall), declining to 270 mm in 2050s and to 220 mm during 2080s. The spatial results for moderate scenario over 2010-80s are mapped in Figure 8.12 (middle). Meanwhile, the scenario corresponding to the pathway with the highest GHGs

(SSP585_MIROC6) shows Ho Chi Minh's city rainfall increase to around 220 mm (above the 1980 baseline rainfall) during 2030s, rising up to 290 mm in 2050s, escalating to about 380 mm in 2080s. The spatial results for high emission scenario over 2010-80s are mapped in Figure 8.12 (bottom).

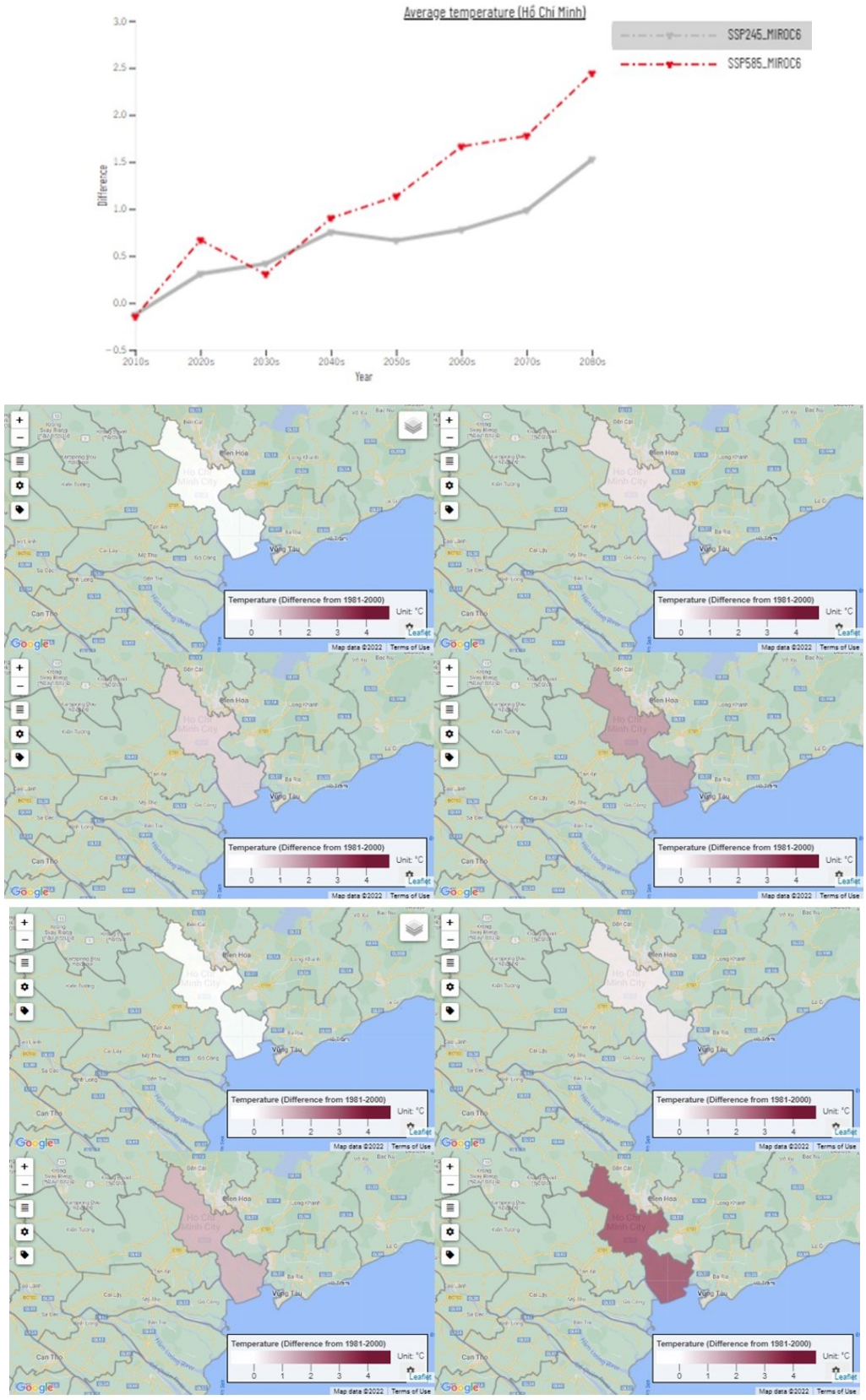

Figure 8.11: Temperature increase in Ho Chi Minh under medium (grey) and high (red) emission scenario till 2080s (top); Spatial results for medium scenario for 2010s, 2030s, 2050s, 2080s (middle); Spatial results for high scenario for 2020s, 2030s, 2050s, 2080s (bottom)

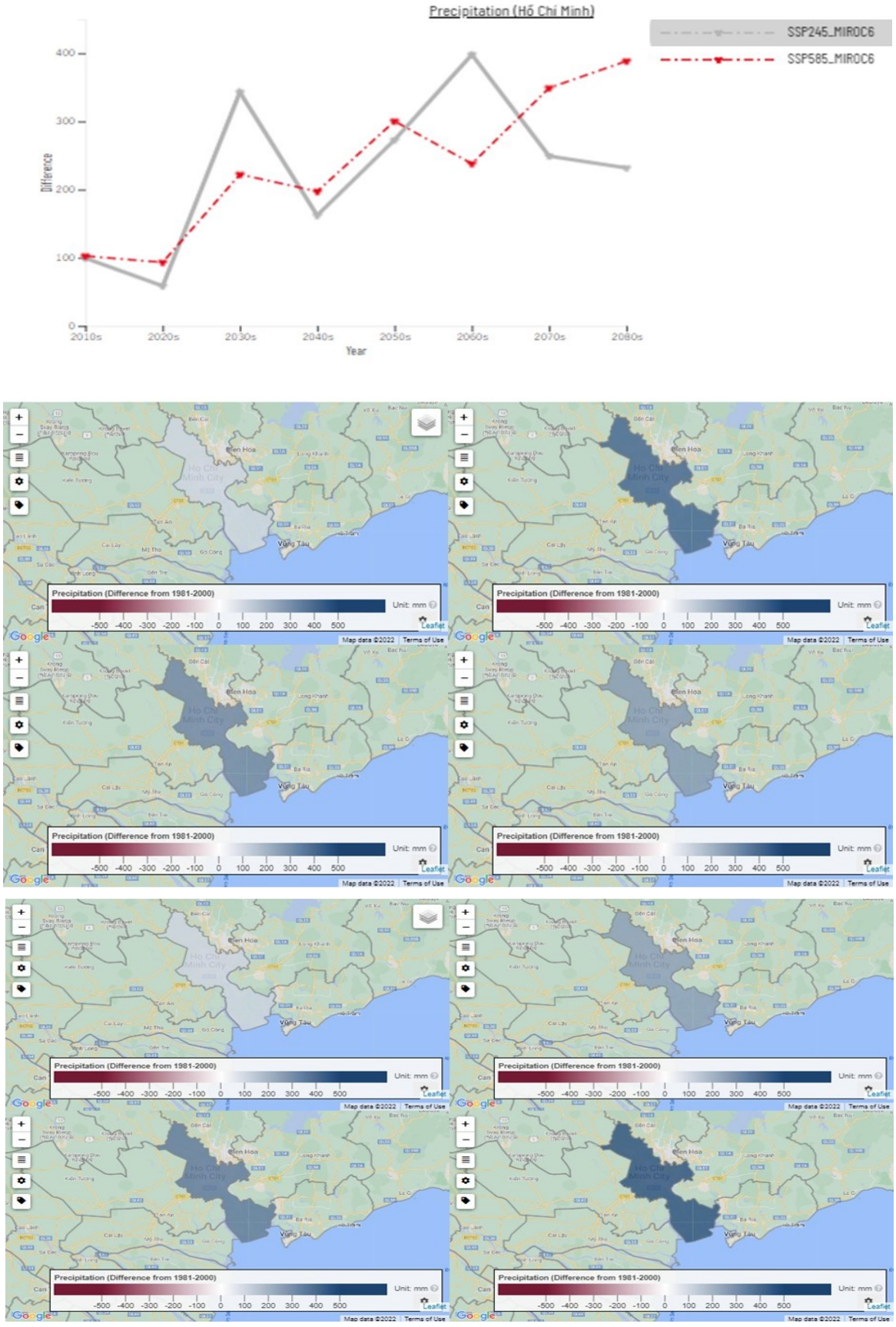

Figure 8.12: Precipitation variation in Ho Chi Minh under medium (grey) and high (red) emission scenario till 2080s (top); Spatial results for medium scenario for 2010s, 2030s, 2050s, 2080s (middle); Spatial results for high scenario for 2020s, 2030s, 2050s, 2080s (bottom)