

8.3.1 Bangkok

The GHG emissions of Bangkok was 2.3 MtCO_{2e} in 1975, that escalated to 9.2 MtCO_{2e} in 1990 and 35.3 MtCO_{2e} in 2015. A majority of the emissions in 2015 (51%) were contributed by the industry sector (Figure 8.1, top), followed by transport sector (28%), energy sector (17%), residential sector (4%) and agricultural sector (~0%). As per the ICLAP model estimates (Figure 8.1, below), there would be an increase in emissions at 7.0% per annum, leading to 45 MtCO_{2e} in 2030 and 59.8 MtCO_{2e} in 2050.

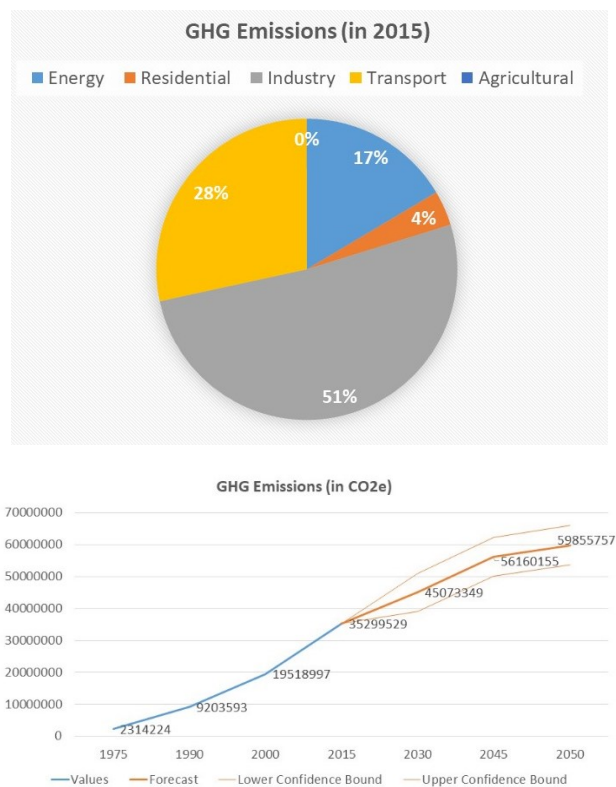


Figure 8.1: GHG contributions from different sectors in Bangkok (top); ICLAP model estimates for Bangkok's GHG emissions till 2050 (bottom)

The results for climate variability in Bangkok indicate a temperature increase of 0.4–2.7 degC in the long run (Figure 8.2, top) depending on the emission scenarios. 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) to 1.25 degC in 2050s, peaking to 1.8 degC by 2080s. The spatial results for moderate scenario over 2010-80s are mapped in Figure 8.2 (middle). Meanwhile, the scenario corresponding to the pathway with the highest GHGs (SSP585_MIROC6) exhibits an increase of 0.5 degC during 2030s (above the 1980 baseline temperature), 1.5 degC in 2050s further escalating to 2.7 degC above normal during 2080s. The spatial results for high emission scenario over 2010-80s are mapped in Figure 8.2 (bottom). Meanwhile, the precipitation variation for Bangkok ranges from 30–240 mm in the long run (Figure 8.3, top) depending on the emission scenarios. The scenario corresponding to the pathway with moderate GHGs (SSP245_MIROC6) exhibits an increase of 190 mm during 2030s (above the 1980 baseline rainfall) dipping to 30 mm in 2050s, re-escalating to 240 mm above average during 2070s and decreasing again to 100 mm during 2080s. The spatial results for moderate scenario over 2010-80s are mapped in Figure 8.3 (middle). Meanwhile, the scenario corresponding to the pathway with the highest GHGs (SSP585_MIROC6) exhibits an increase of 150 mm (above the 1980 baseline rainfall) during

both 2030s and 2050s, further increasing to 240 mm above average during 2070s and decreasing again to 195 mm during 2080s. The spatial results for high emission scenario over 2010-80s are mapped in Figure 8.3 (bottom).

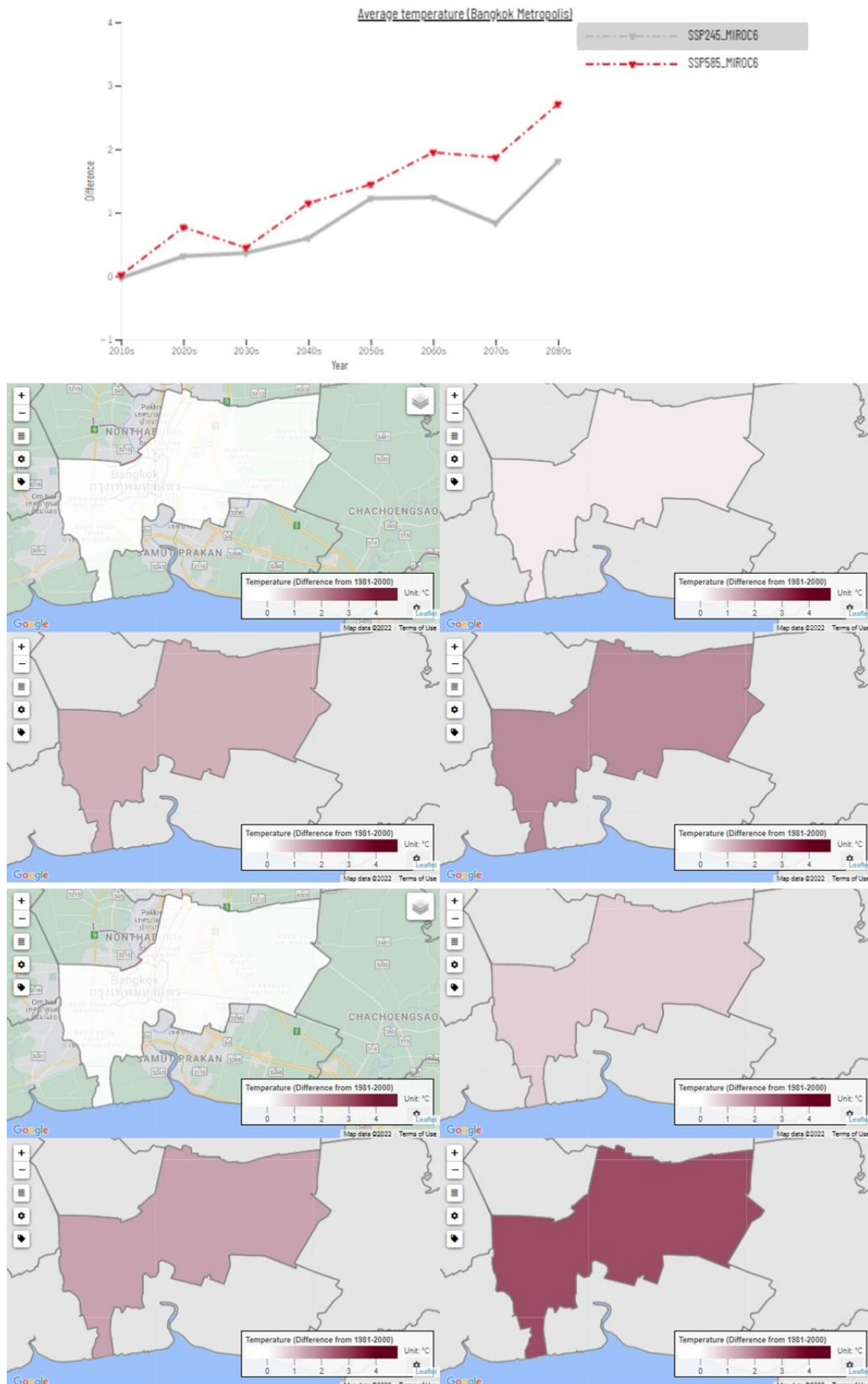


Figure 8.2: Temperature increase in Bangkok under medium (grey) and high (red) emission scenario till 2080s (top); Spatial results for medium scenario for 2010s, 2030s, 2050s, 2080s (middle); Spatial results for high scenario for 2020s, 2030s, 2050s, 2080s (bottom)

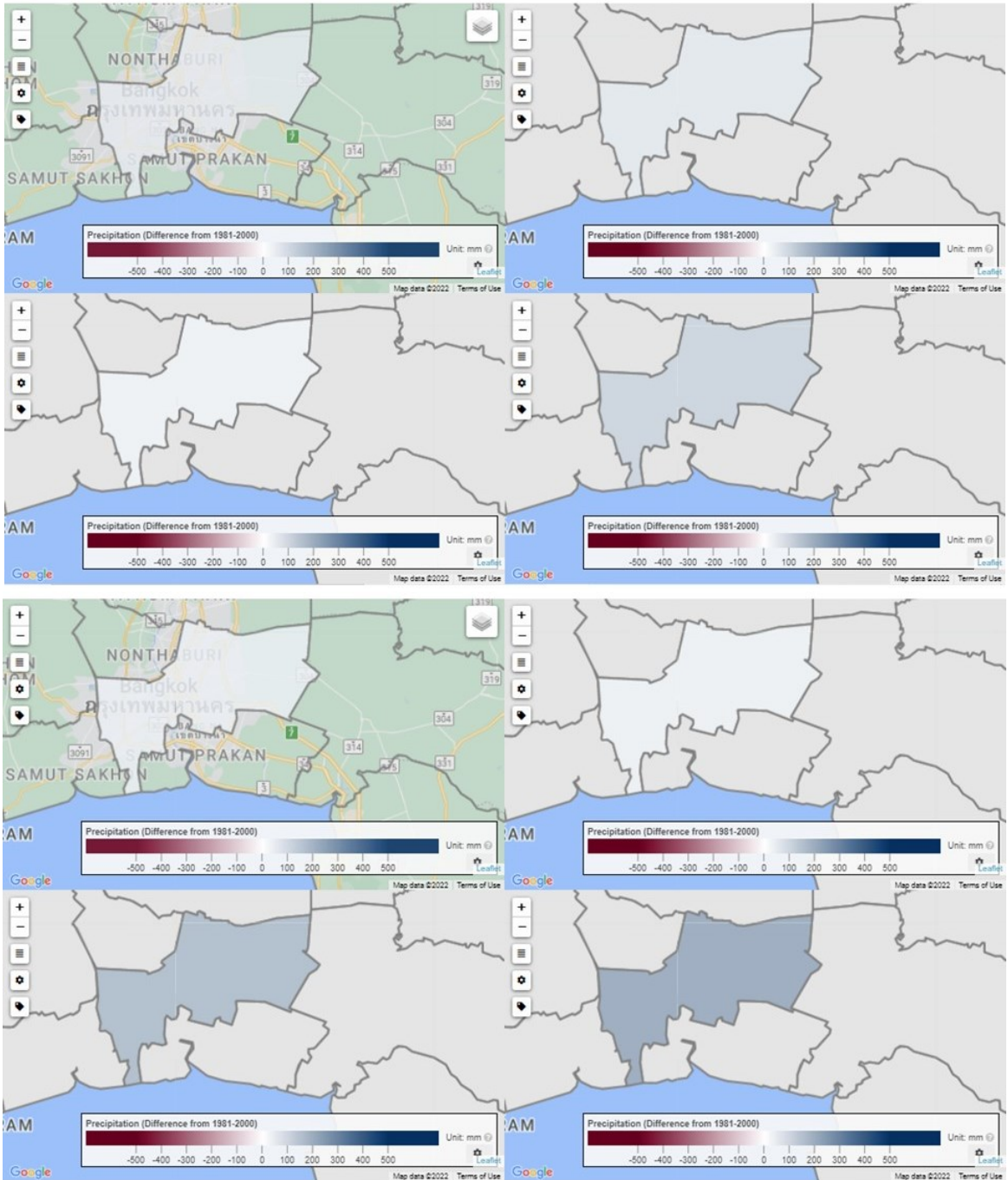
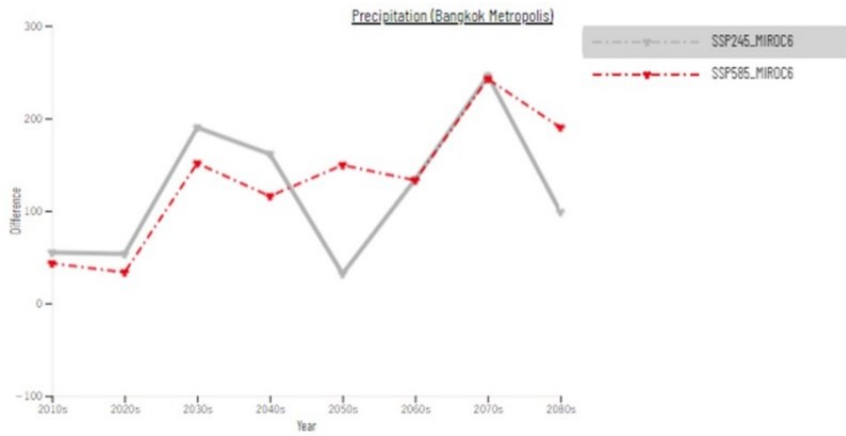


Figure 8.3: Precipitation variation in Bangkok under medium (grey) and high (red) emission scenario till 2080s (top); Spatial results for medium scenario for 2010s, 2030s, 2050s, 2080s (middle); Spatial results for high scenario for 2020s, 2030s, 2050s, 2080s (bottom)