

8.3.2 Kuala Lumpur

The GHG emissions of Kuala Lumpur was 5.0 MtCO₂e in 1975 that escalated to 13.7 MtCO₂e in 1990 and 37.2 MtCO₂e in 2015. A majority of the GHG emissions in 2015 (Figure 8.19, top) were contributed by the transport sector (52%) and industry sector (35%), followed by energy sector (10%) and residential sector (3%). As per the ICLAP model estimates (Figure 8.19, below), there would be an increase in emissions at 5.1% per annum, leading to 47.7 MtCO₂e in 2030 and 62.0 MtCO₂e in 2050.

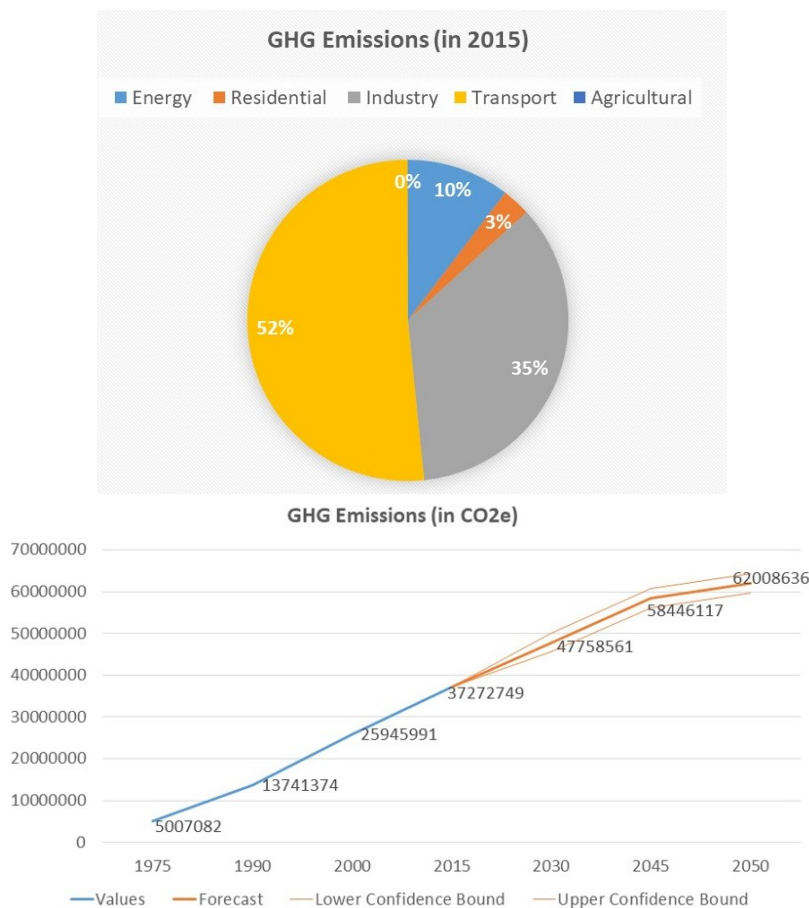


Figure 8.19: GHG contributions from different sectors in Kuala Lumpur (top); ICLAP model estimates for Kuala Lumpur's GHG emissions till 2050 (bottom)

The results for climate variability in Kuala Lumpur indicate that depending on the emission scenarios, there would be a temperature increase of 0.3–2.0 degC from 2030-80s (Figure 8.20, top). The scenario corresponding to the pathway with moderate GHGs (SSP245_MIROC6) exhibits an increase of 0.5 degC in 2030s (above the 1980 baseline temperature), 0.5 degC in 2050s, peaking to 1.1 degC in 2080s. The spatial results for moderate scenario over 2010-80s are mapped in Figure 8.20 (middle). Meanwhile, the scenario corresponding to the pathway with the highest GHGs (SSP585_MIROC6) exhibits an increase of 0.3 degC in 2030s (above the 1980 baseline temperature), 1.0 degC in 2050s further rising to 2.1 degC above normal up to 2080s. The spatial results for high emission scenario over 2010-80s are mapped in Figure 8.20 (bottom). Meanwhile, the precipitation change for Kuala Lumpur shows high variability in the long run, ranging from 200 to 420 mm from the normal (Figure 8.21, top) depending on the emission scenarios. The scenario corresponding to the pathway with moderate GHGs (SSP245_MIROC6) exhibits of about 200 mm in 2030s (above the 1980 baseline rainfall), gradual increase of 245 mm in 2050s,

to 300 mm in 2070s and 330 mm in 2080s. The spatial results for moderate scenario over 2010-80s are mapped in Figure 8.21 (middle). Meanwhile, the scenario corresponding to the pathway with the highest GHGs (SSP585_MIROC6) shows Kuala Lumpur's city rainfall increase to around 200 mm (above the 1980 baseline rainfall) in 2030s, 310 mm in 2050s, declining to 230 mm in 2060s, re-escalating to about 420 mm in 2080s. The spatial results for high emission scenario over 2010-80s are mapped in Figure 8.21 (bottom).

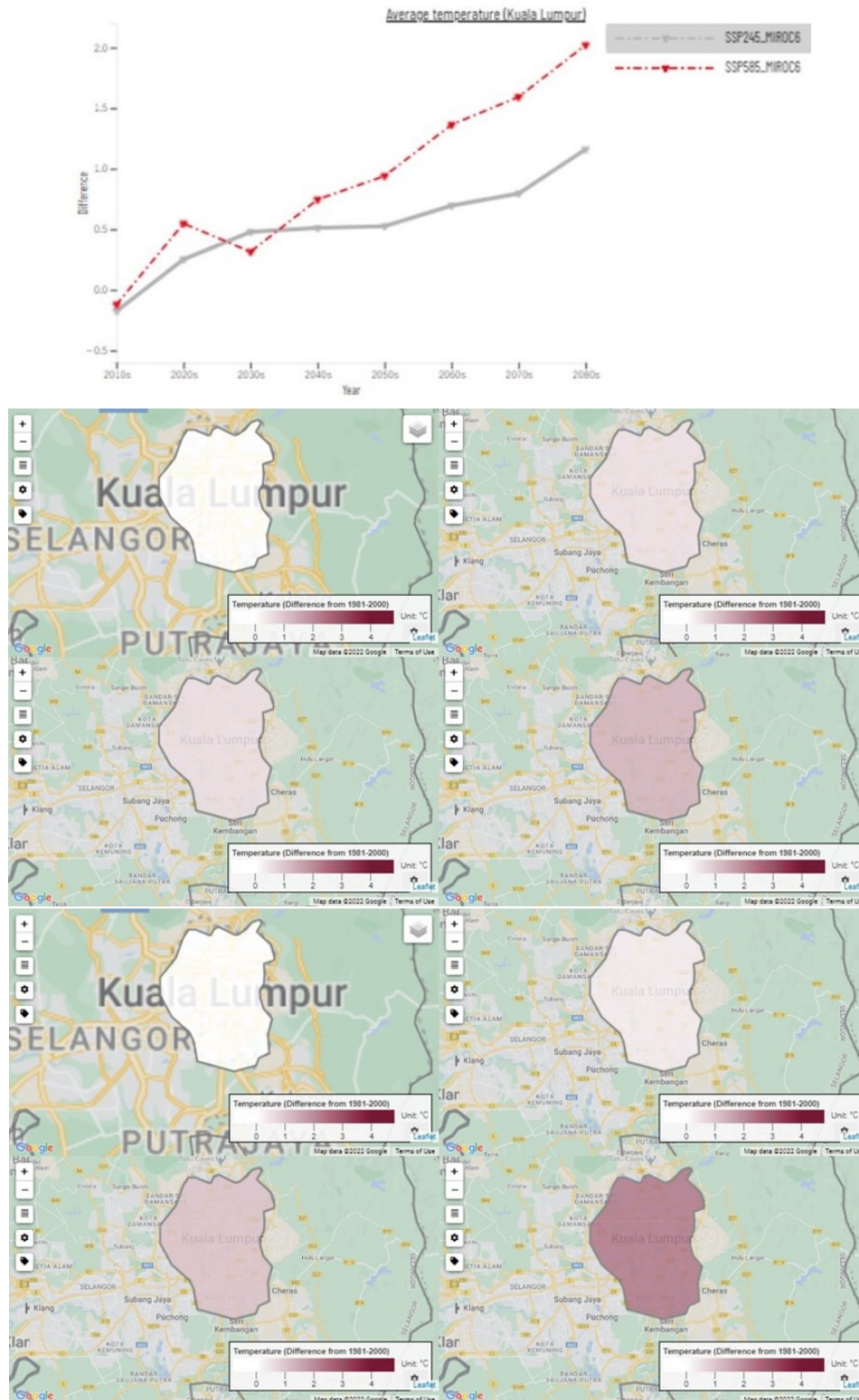


Figure 8.20: Temperature increase in Kuala Lumpur under medium (grey) and high (red) emission scenario till 2080s (top); Spatial results for medium scenario for 2010s, 2030s, 2050s, 2080s (middle); Spatial results for high scenario for 2020s, 2030s, 2050s, 2080s (bottom)

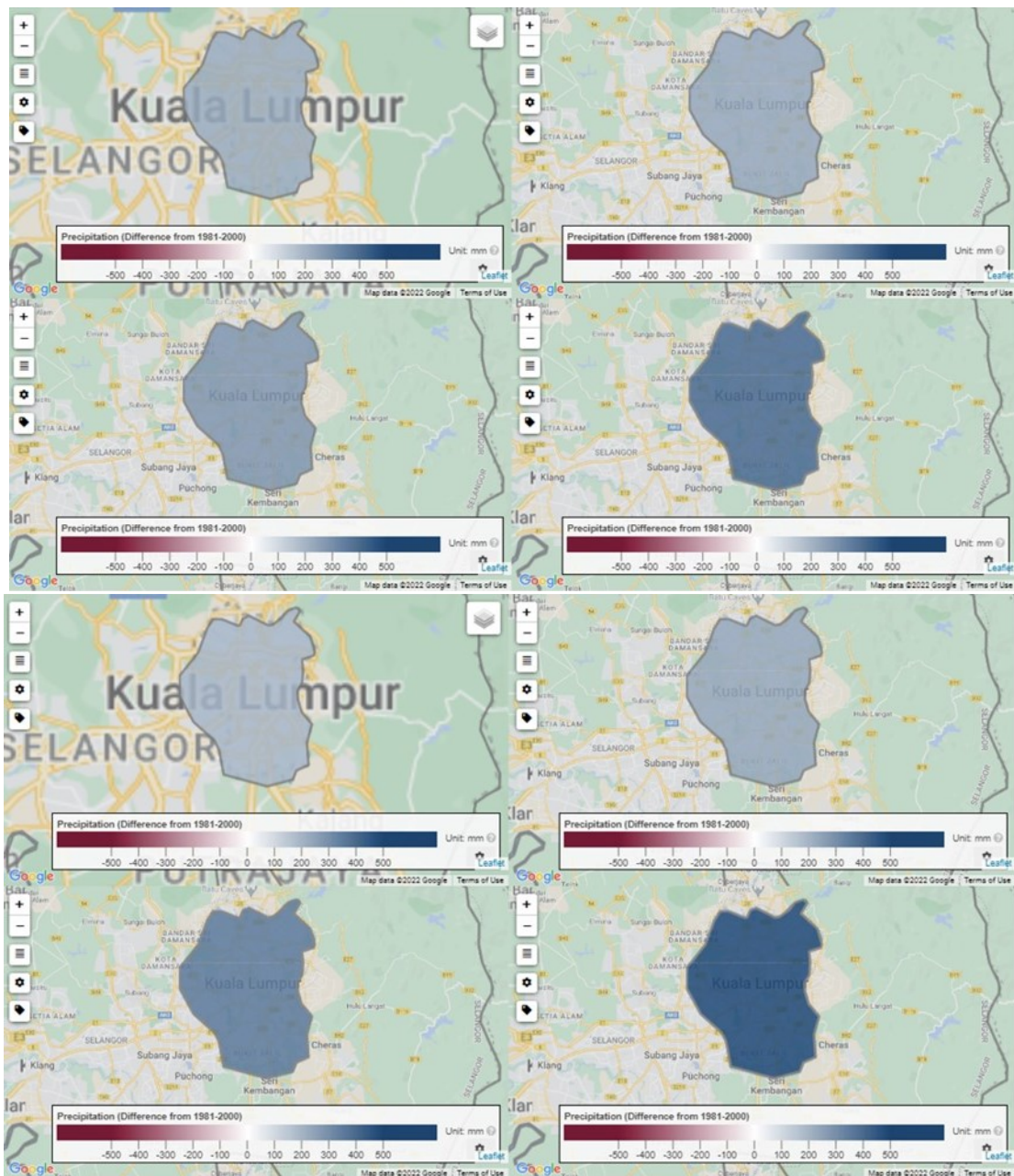
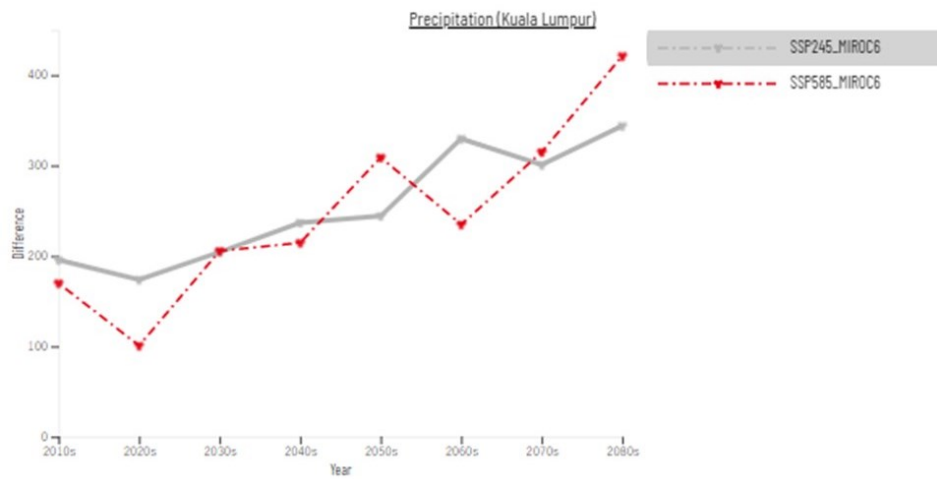


Figure 8.21: Precipitation variation in Kuala Lumpur under medium (grey) and high (red) emission scenario till 2080s (top); Spatial results for medium scenario for 2010s, 2030s, 2050s, 2080s (middle); Spatial results for high scenario for 2020s, 2030s, 2050s, 2080s (bottom)