

## **Climate change scenarios over Southeast Asia**

### **ABSTRACT**

Southeast Asia is one of the world's regions most vulnerable to climate change impacts with low-lying land, more severe floods and droughts, larger populations, higher dependency on agriculture for the economic sector, and low resilience of communities. Therefore, a study on how future climate change will affect this region has been conducted, and the results are provided in this paper. Projected surface temperatures and total precipitation from the baseline period of 2013 up to 2100 for Southeast Asia were investigated using the Global Climate Model (GCM) and the Weather Research Forecast (WRF) v3.9.1.1 modelling systems under RCP4.5 and RCP8.5 future climate scenarios. The results showed that future temperatures were projected to increase under both climate scenarios RCP4.5 and RCP8.5; however, precipitation was projected to decrease. The temperature was projected to increase by 0.93°C and 2.50°C under RCP4.5 and 8.5. Meanwhile, precipitation greatly varied under the RCP4.5 and RCP8.5 climate scenarios in both monsoonal seasons. We conclude that the change in climate variables, particularly the temperature and precipitation, could potentially increase the vulnerability of this region.