Abstract

This study aimed to investigate the effects of the climate change and its extreme on natural rubber production in Thailand and project changes in natural rubber production under future climate projections from global circulation models (GCMs) as reported in IPCC AR5 (2014). The IV-GMM panel data regression was utilized to address possible endogeneity bias and the data across 77 provinces in Thailand from 1988-2016 were collected from several sources. Here we find that the rubber yields of provinces located in the North and the Southern regions were projected to drop in all scenarios. In contrast, the rubber yields in the Central and the Eastern regions were projected to increase under RCPs 4.5 and 8.5. At the national level, the rubber yield was project to decline ranging from 2.50-4.85 percent from the baseline. Considering the effect of climate change on harvested area of natural rubber, this study found that the rubber harvested area of provinces located in the Central and Eastern regions were projected to have the largest drop in percentage in all scenarios and the harvested area is forecast to drop in many provinces. At the national level, the harvested area was projected to slightly decline ranging from -0.36 and -0.47 percent. By multiplying the yield and harvested area of natural rubber, this study explored that the supply will likely be declined in many provinces in the lower section of South-West, Central and Northeastern regions. At the national level, rubber supply was projected to drop ranging from 2.86-5.30 percent from the baseline.