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Assessing the Vulnerability to Climate Variation of Farm-Households in the East of Thailand

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Abstract

Thailand, a crucial agricultural zone, is facing climate variability and extreme events. At the regional level, the east of Thailand is a major fruit trees and rubber plantation zone. Climate variation is inevitably affecting this essential agricultural region of Thailand. To guide a proper policy intervention, an assessment of vulnerability to climate variation plays an important role. The paper aims to assess the vulnerability index in the east of Thailand as well as farm households in Tha Mai and Khao Khitchakut districts in Chanthaburi province. Primary data of a 452 farm households and secondary data were utilised. The paper applies the vulnerability index classified into 3 factors based on Intergovernmental Panel on Climate Change (IPCC). They are 1) exposure: the nature and extent of changes to regions' climate variability, 2) sensitivity: the human-environmental conditions that can worsen the hazard, ameliorate or trigger an impact of climate variation, and 3) adaptive capacity: a process through which societies taking the measures to reduce negative effects of climate variation. The results show that among the 7 provinces in the east of Thailand, Trat was the highest vulnerable province and Rayong was the least one. The significant exposure factors were temperature, average precipitation by month and drought risk. The important sensitivity factor was agricultural water resources. Last, the crucial adaptive capacity factors were poverty incidence, gross provincial product and household workforce ratio. Chantaburi province as the study area was found to be a medium vulnerable province (0.4633). When considering the Livelihood Vulnerability Index, farm households in Tha Mai (the main fruit trees area) revealed lower vulnerability than those in Khao Khitchakut (the major rubber trees zone). Therefore, crop diversity, social integration and agricultural water management of farm-households are important adaptive strategies.

Keywords: Adaptive strategies, climate variation, East Thailand, vulnerability index