

Pukkanut Peuaksakon 2014: Assessing the Relationships between Wealth and Flood/Drought Damages in the Thai Agricultural Sector under Environmental Kuznets Curve Hypothesis. Master of Science (Agricultural and Resource Economics), Major Field: Agricultural and Resource Economics, Department of Agricultural and Resource Economics. Thesis Advisor: Assistant Professor Penporn Janekarnkij, Ph.D. 68 pages.

This study tests whether the relationship between wealth as reflected by economic development and losses from flood and drought in the Thai agricultural sector conforms to environmental Kuznets curve (EKC) hypothesis. It also investigates factors determining those flood and drought damages using annual panel data of the total 76 provinces for the period of B.E.2520-2555. Per capita gross provincial product (GPP) adjusted in real term is used as proxy of economic development and losses were indicated by agricultural damaged areas from flood and drought.

Using random effect model, the results indicate the existence of an inverted-U shape relationship between economic development and agricultural damages from flood and drought. The damaged areas from flood increase with per capita GPP up to 109,837 Baht/year and decrease thereafter. The damaged areas from drought increase up to per capita GPP level of 85,717 Baht/year and start to decline thereafter.

Results indicate that in addition to economic development of the province, flood damages increase with rain variation, increased population, and increased areas for rice and field crops. An expansion of perennial crops and increased number of flood retention areas reduce flood damages of the province. In the drought situation, rain variation and an expansion of field crop areas are significant factors for the increased agricultural damaged areas of the province.

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