

Assessment of Agricultural Vulnerability Index: A Case Study in Thailand

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Abstract: Climate change is an important problem of nation and international which impacts on environment, livelihood, economic, especially agriculture. The objective of the research is to develop the Agricultural Vulnerability Index (AVI) in the eastern part of Thailand, namely Chon Buri, Rayong, Chanthaburi and Trad provinces. The AVI is calculated and mapped in ArcGIS Desktop. The AVI includes three major components: Meteorology, Hydrology and Natural Disaster which collect from 1982-2011. Each is comprised of several sub-components: Average minimum temperature, Average maximum temperature, Total yearly runoff, Total yearly soil water, Number of flood, land slide, storm and drought. The highest average AVI is found in Khunsong sub-district, Kaenghangmaeo district, Chanthaburi province and it is accounted to 0.7017. Meanwhile, in Rayong province, the highest average AVI is accounted to 0.6622 and it is found in Krached sub-district, Muang district. In Trad province, the highest average AVI is accounted to 0.6567 and it is found in Thakum sub-district, Muang district. Finally, in Chon Buri province, the highest average AVI is accounted to 0.4694 and it is found in Bankhod sub-district, Muang district. This index can inform decisions about agricultural adaptation responses and it may prove a useful tool for policy analysts interested in how to ensure poor adaptation in this agricultural area.

Keyword : Agriculture; Vulnerability; Index; Climate Change; GIS