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Research Article

Vulnerability Assessment of Climate Change on Agriculture Sector in the South Sumatra Province, Indonesia

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Abstract

Background and Objective: There is strong evidence that climate change causes the annual increase of average global temperature, changes in rainfall patterns, the increase of sea levels and the rise of frequency and intensity of extreme weather. Climate change influence agriculture such as the way crops grow, develop and yield. Agriculture is vital to the progress of Indonesia, because more than 60% of population depend on agriculture for their livelihood. The contribution of the agricultural sector to the total economy, however is challenged by its vulnerability to climate change. Study on vulnerability in agricultural sector due to climate change has been implemented in South Sumatra Indonesia. The objectives of this study are to assess the evidence of climate change, the level of vulnerability and identify areas that high level of vulnerability in agricultural sector in that region. **Materials and Methods:** Materials of this study is data of climate, agroclimate and staple food crops (Paddy, corn, soybean) and socio-economic that obtained by survey, interviews, public hearings and data collection from some relevant sources. Methods of this study is descriptive explanatory that using the concept of vulnerability assessment. Vulnerability is a function of exposure, sensitivity and adaptive capacity. **Results:** The results of this study indicate that to some extent in South Sumatra has experienced climate change shown by the changing patterns of air temperature, rainfall, hythergraph and Oldeman classification. The high exposure showed in South Sumatra such as Banyuasin and Ogan Komering Ilir. Most districts of South Sumatera is dominated by very high sensitivity. Some areas of South Sumatra such as Lubuk Linggau and Pagar Alam have very high adaptive capacity. South Sumatra experience high level of vulnerability to climate change. **Conclusion:** The areas that shown experience high level of vulnerability of decreasing production of wetland paddy, upland paddy, corn and soybean respectively are East Ogan Komering Ulu, Muara Enim, Musi Banyuasin and East Ogan Komering Ulu. Generally, South Sumatra Indonesia has high vulnerability and risk in agricultural sector. High vulnerability and risk in agricultural sector will disrupt food security in Indonesia.

Key words: Climate change, exposure, sensitivity, capacity adaptive, vulnerability, agriculture

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Competing Interest: The authors have declared that no competing interest exists.

Data Availability: All relevant data are within the paper and its supporting information files.