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Menugal farming: Sustaining food security, climate resilience, and cultural heritage in Borneo

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Abstract

The current state of food security in Indonesia shows that the country still has due diligence in making sure its citizens have access to nutritional food. In response, the government has initiated a food estate programme designed to increase food reserves and enhance the local food system by opening agricultural land in several regions, including Borneo. The food estate programme was initiated in 2021 by targeting peatland areas but has faced a lot of constraints during its implementation, mainly related to unsuitable agricultural practices and conflicts related to land and social issues. Despite the huge coverage across Borneo and the strategic location, the Food Estate Programme did not show promising results in sustaining food security in Indonesia. Meanwhile, in the mountain area of Borneo, covered by a large area of peatland, a centuries-long agricultural practice passed on for many generations called Menugal. It is a traditional Meratus Dayaknese method for rice cultivation covering cultural practices, from choosing the suitable agrarian land until the harvest period. This study aims to dissect aspects of Menugal farming as indigenous knowledge and establish its connection to smart farming agriculture to assess its impact on food security, and climate resilience. A literature review is done through Google Scholar and Web of Science to identify each aspect of Menugal and analyse its role as a climate-smart agriculture. The expected result will show the extent of indigenous knowledge such as Menugal can provide information regarding sustainable agricultural approach to enhance food security and resilience towards climate change. This study is expected to inform policymakers about suitable agricultural practices aimed at integrating indigenous knowledge in the implementation of food estate programme as a concrete evidence of governments' efforts in promoting food sovereignty.

Keywords: Borneo, climate-smart agriculture, food estate, food security, indigenous knowledge, Menugal