

Prediction of rice consumption in South Kalimantan by considering population growth rate

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Abstract. The availability of rice in an area that is less than the requirement of the population might have an impact on the instability of economic. The Province of South Kalimantan is one of the regions in the territory of Indonesia which is one of the mainstays as a source of production of national rice and barns. Population in the province continues to increase from year to year and greatly influences the dynamics of the number of rice consumption in the area. In this study, we predict the rice consumption in the Province of South Kalimantan by considering the population growth rate in the region. Rice production is modeled mathematically by forming assumptions that pay attention to data on harvested area, productivity, and productions of milled dry grain and rice. Parameters that affect the model are estimated by using the nonlinear least squares method. Furthermore, we present predictions of the number of rice production and consumption in the Province of South Kalimantan. From these predictions, it can be concluded that from 2019 to 2028, the Province of South Kalimantan experienced a surplus of rice that continued to increase to exceed 100%, and from 2029 to 2050 it declined to reach 74.02%.