EVALUATION OF WHITE CRYSTAL SUGAR PRODUCTION TARGETS AT PT. X WITH A PRODUCTION PLANNING APPROACH AND INVESTMENT ANALYSIS IN ORDER TO FULFILL NATIONAL SUGAR DEMAND

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ABSTRACT

Demand for sugar in Indonesia continues to increase, but there is an imbalance between production and consumption of white crystal sugar at the consumer level. PT X is a subsidiary of a state-owned enterprise in the sugar cane agro-industry sector that produces white crystal sugar. The research focuses on sugar production planning at PT X to meet demand from consumers, using Production Planning methods namely Forecasting Single Exponential Smoothing, S&OP (Sales and Operations Planning), and Investment Analysis. The results of data patterns in real data from 2019 to 2022 are stationary data patterns. Forecasting with Single Exponential Smoothing uses an alpha value parameter of 0.30. The calculation results obtained MAD of 6541, MSE of 70321436, and MAPE of 337%. MAD. Total sugar production in 2023 is projected to be 79,805 tons, with an average production of 9,976 tons per Level strategy is chosen to be an S&OP strategy with a total cost of Rp 94.688.400.019. There is a shortage of land for planting sugarcane as a raw material for sugar amounting to 2,929 hectares of sugarcane fields. Of the three investment alternatives (buy, rent, buy and rent) that have been calculated and analyzed using NPV, IRR, and Payback Period, the rental alternative is the best choice.

Keywords: Forecasting, White Crystal Sugar, Production Planning, Investment Analysis, Sugarcane