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Analysis of the past trends and the future food consumption in south africa: A data-driven approach

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Abstract

Examining the changes in food availability and shifts in eating behaviour is crucial for addressing South Africa's persistent challenge related to food insecurity and the triple burden of malnutrition. The study used secondary data from the FAOSTAT Food Balance sheet for South Africa from 1982 to 2022 to analyse national food consumption. Descriptive statistics were applied to examine per capita intake, trade volumes and food loss across major food groups. The Auto-Regressive Integrated Moving Average (ARIMA) modelling was employed to show the historical patterns and forecast future food intake for the coming ten years (2032). The Findings reveal that food groups that include cereal, sugar sweeteners, vegetable oil, and meat have consistently contributed the most to the dietary energy intake for the past 40 years. However, heavy reliance on cereal imports and significant losses indicate low domestic production and supply chain management inefficiencies. While sugar sweeteners, vegetables and fruits exhibit a positive trade balance, their high perishability and loss rates underscore the need to improve the cold storage infrastructure. Other food groups, including pulses, fish, milk and tree nuts, are under-consumed, possibly due to limited availability, high price and changes in population dietary preferences. The study also highlights a nutritional transition characterised by a rising consumption of processed, high-fat, and animal-based foods and a decline in healthy food options such as fruits, vegetables, and pulses. The forecast indicates a further decrease in the consumption of cereals and a continued rise in meat, starchy and oil, suggesting a shift towards a more monotonous diet.

Keywords: ARIMA forecasting, nutrition transition, South Africa