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Statistical Approaches to Fisheries Data Towards Planning and Policy Development in Nepal

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The fisheries and aquaculture sector contribute 0.44% to the national GDP and 1.83% to the agricultural GDP of Nepal. Nepal Agriculture Perspective Plan (APP) has classified this sector as relatively small but well-regarded for its contributions to food and nutrition security, employment, mainly for the marginalized and deprived groups. This article outlines the nature of fisheries statistics and its mechanical compass in guiding plans and policy development. The objective of this paper is to elaborate the current scenario of fisheries data with respective statistical methods to enhance its contribution in planning and policy development in the aquaculture sector of Nepal. Time series data collected from statistics on fisheries and aquaculture published by Ministry of Agriculture and Livestock Development in various years were used for the study. These data were imported from MS-Excel to statistical software friendly format for statistical analysis. Time-series analysis was carried out to draw inference from various analysis such as the fundamental assumption of autocorrelation, seasonal variation, and trend analysis. Autocorrelation analysis of fisheries and aquaculture data was tested from year 2010 till 2021 undergo using d –statistic. Other econometric models such as ARIMA and exponential smoothing were also examined to choose the best model for forecasting future estimates and trends. Seasonal variation such as temperature fluctuations, migration patterns, breeding cycles and food availability affects the production of fishery data. Long term changes over a period of time such as climate change ,overfishing and habitat degradation are key indicators of trend imparts the production of fishery data . Time series analysis of yearly fishery data indicates presence of autocorrelation on a certain period of lag that is useful to understand pattern of past and current values for future prediction .By realizing both seasonal variation and trend cycle stakeholders and policy makers needed to work with data .The correct statistics and statistical analysis play an important role in guiding the formulation of policies and structure of the Nepalese aquaculture system.