India has made considerable progress as far as creation of irrigation potential is concerned. The gap between irrigation potential created and utilized is a matter of concern. The success of irrigation system operation and planning depends on the quantification of supply and demand and equitable distribution of supply to meet the demand if possible, or, to minimize the gap
between the supply and demand. Hence, it is essential to forecast reservoir inflow for proper planning and management of canal irrigation projects. Autoregressive Integrated Moving Average (ARIMA) and X-12-ARIMA are one of the extensively used software packages for time series forecasting. This study focused on the Application of these software packages for Monthly Stream Flow Forecasting of Kangsabati River of India. Here, ARIMA (2, 1, 1) (2, 1, 2) and ARIMA-X-12 (2, 1, 1) (2, 1, 2) models were found to have less Bayesian Information Criterion (BIC), Akaike Information Criterion (AIC) and many other statistical values, selected for mean monthly foresting. In the comparison of ARIMA and X-12-ARIMA models, the X-12-ARIMA model is found more accurate then the ARIMA model for monthly stream flow forecasting. This study suggests that the selected models can be used successfully for monthly stream flow forecasting of Kangsabati river.

Reference


Index Terms
Key words

ARIMA

X-12-ARIMA

Stream flow

forecasting

Time series analysis

Diagnostic checks