

## An Investigation of Crop Diversity's Impact on Income Risk of Selected Crops

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**Abstract :** As a result of uncertainty and doubts about the quantity of agricultural products, greater significance has been attached to risk management in the agricultural sector. Normally, farmers seek to minimize risks, and crop diversity has always been a means to reduce risk. The study at hand seeks to explore the long-term impact of crop diversity on income risk reduction. The timeframe of the study is 1998 to 2018. Initially, the Herfindahl index was used to estimate crop diversity in different periods, and next, the Hodrick-Prescott filter was applied to estimate income risk both in nominal and real terms. Finally, using the vector error correction model (VECM), the long-term impact of crop diversity on two modes of risk for the farmer's income has been estimated. Given the long-term pattern's results, it is evident that in the long run, crop diversity can reduce income fluctuations in two nominal and real terms. Moreover, results showed that in case the fluctuation shock affects the agricultural income in the short run, to balance out the shock in nominal and real terms, 4 and 3 cycles are needed, respectively. In other words, in each cycle, 25% and 33% of the shock impact can be removed, respectively. Thus, as the results of the error correction coefficient showed, policies need to be put in place to prevent income shocks. In case of a shock, they need to be balanced out in a four-year period, taking inflation into account, and in a three-year period irrespective of the inflation, and reparative policies such as insurance services should be developed.

**Keywords :** risk, long-term model, Herfindahl index, time series model, vector error correction model

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