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Estimation of Risk Efficient Farm Structures along the Kızılırmak River in North Central Anatolia: An Application of Minimization of the Absolute Deviation

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Abstract: A risk-programming model was developed to evaluate the tradeoffs between risk and expected returns for farms along the Kızılırmak River in North Central Anatolia. Risk efficient farm structures were derived for representative farms by using minimization of the absolute deviation procedures, which permit the estimation of a farm's risk-return frontier. Research results reveal that farm plans are sensitive to the risk criteria in the research area. Rice and maize are the most high-risk activities, followed by lettuce and soybean. Wheat, sugar beet and dairy activities have a more stabilizing effect on farm income compared to others. Medium size and large farms prefer more high risk and cash crops such as rice and soybean compared to small farms. The results also suggest that the total net farm return increases for all sizes as the risk increases and that farmers tend to choose more stable farm plans in the research area.

Key Words: Decision model, profit maximization, resource allocation, risk, MOTAD

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