

## A LINEAR PROGRAMMING APPROACH TO CROPS AND LIVESTOCK ENTERPRISES PLANNING IN SUGARCANE BASED FARMING SYSTEM FOR MEDIUM CATEGORY OF FARMS IN DISTRICT MEERUT OF UTTAR PRADESH

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**Abstract:** A livelihood system is the full range of activities available to the medium category of farms. The farmers are often faced with the problem of how to select the optimal cropping patterns that significantly contribute to sustainable production. The present study was conducted during the year 2013-14 in District Meerut of Uttar Pradesh to know the possibilities of optimum combination of different enterprises for the enhancement of the farms income and employment of medium category of farms household's. Multi stage stratified random sampling design was used to collect the primary data from; a sample of 19 respondents was selected on the basis of probability proportion to size of holdings. In this study, a linear program that reflects these choices by selecting a combination of farm activities that is feasible given a set of fixed farm constraints and that maximizes income while achieving other goals such as food security is developed. The results obtained by using the linear programming model are more superior. The difference in gross income is 25.08 per cent higher than the existing farm plan and labour man days 37.01 per cent higher compare to the existing farm plan.

**Keywords:** Linear programming, Whole-farm plan, Employment generation

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