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A FUZZY GOAL PROGRAMMING MODEL FOR ALLOCATION OF AGRICULTURAL LAND TO THE MAJOR CROPS IN THE SALINE TRACK OF THE RAIN FED ZONE: A CASE STUDY

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Abstract

The purpose of this paper is to propose the Fuzzy Goal Programming (FGP) Model for optimal land allocation in agricultural planning to 10 major crops of the saline track in the rain fed zone under the normal conditions of rain and other factors during the season. The total agriculture planning in the rain fed zone entirely depends upon the monsoon. The goals under study viz. net profit, total yield, labour cost, machine cost, fertilizer and pesticide cost are considered to be fuzzy in nature. Membership functions are maximized to get the most satisfactory solutions of this model. The model is solved as simple additive FGP model as well as weighted FGP model and a comparative study is made on the basis of solutions obtained by taking different sets of weights associated with membership function. A case study is carried out in the saline track of Murtizapur tahsil, of Akola District, Maharashtra (India) to demonstrate the usefulness of the model.

Key Words : *Fuzzy goal programming, Weighted FGP, Tolerance, Saline track.*