

Abstract:

A linear programming (LP) technique was used to model the farming conditions of the small holder dry lands farmers in North Kordofan State with the objective of resolving the food production situation. The study used three farm models; namely, (1) a profit maximization LP model, (2) a profit maximization with a consumption constraint model, and (3) the Target MOTAD to obtain risk optimal farm plans. The study showed that the farmers had a better chance of securing their consumption by applying the risk optimal farm plan. This farm plan suggests that a farmer plants not less than 50% of his total land holding with food crops, especially millet, and also concentrates on production of the cash crop groundnut rather than sesame. The study also highlighted the distortion of the farmer's decision making process, due to prevailed agricultural policy, as a major cause behind the deteriorating food situation.