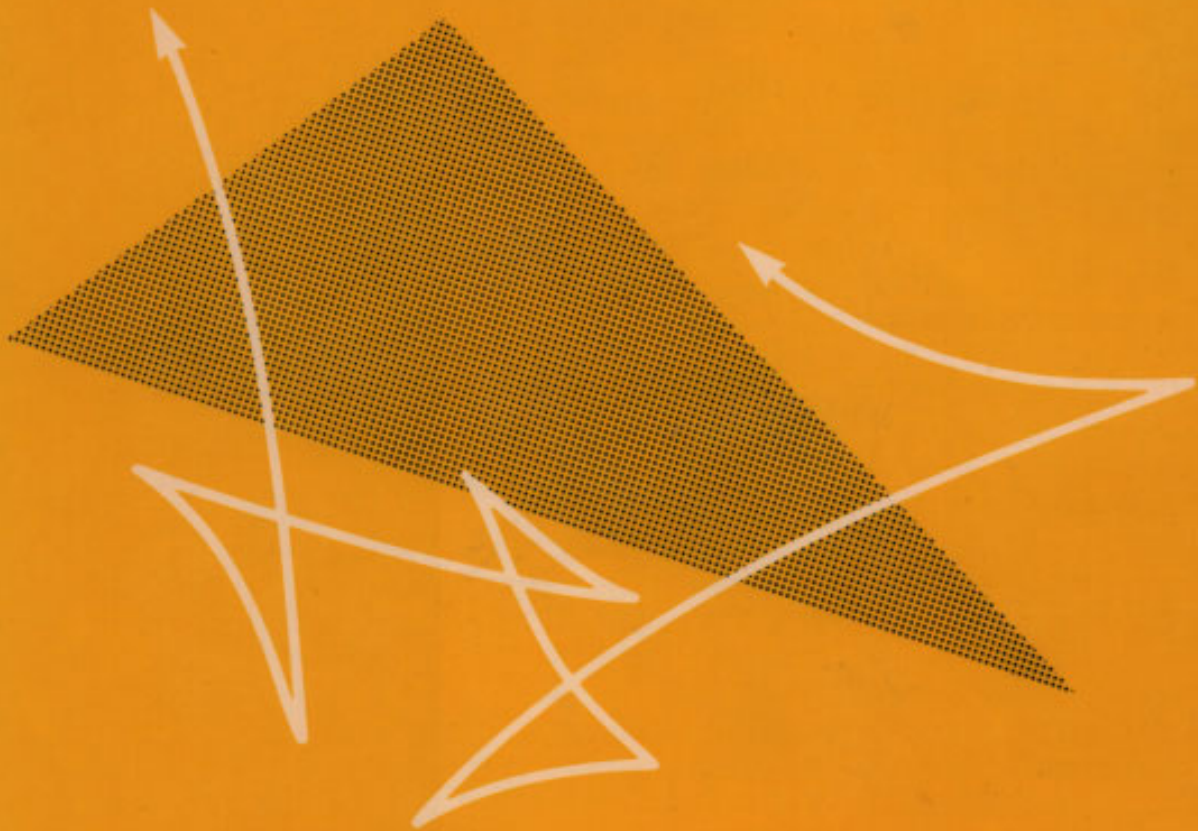


MATHEMATICAL PROGRAMMING FOR ECONOMIC ANALYSIS IN AGRICULTURE



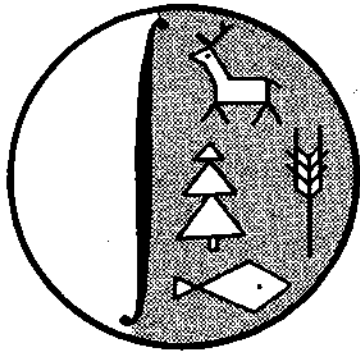
**Peter B. R. Hazell
Roger D. Norton**

In recent years, mathematical programming has become an important and widely used tool for economic analysis in agriculture. Its use has been facilitated by major advances in computing technology and in methods of incorporating observed institutional and economic reality into programming models. As Hazell and Norton show, such models can offer unique advantages over other methods of agricultural sector analysis. Mathematical programming models can address the multivariate and highly interlinked nature of the agricultural sector. Further, they can bring detailed micro-level data bases to bear in the analysis of such policy issues as pricing, employment, investment decisions, comparative advantage, and risk analysis.

This book is the first to describe fully the theory and application procedures needed for building programming models in agriculture. The authors show how many different hypotheses about economic behavior can be incorporated into programming models and how these models can be applied to many diverse questions of agricultural policy. Covering the field completely, including farm-level and sector-level analysis, this book contains chapters written for readers both interested in practical applications and those interested in theoretical underpinnings.

The book features a practical introduction to the theory and practice of mathematical programming and leads the reader through procedures for solving linear models. Model applications to policy analysis are illustrated with numerous real-world studies, with particular emphasis on policy analysis in developing countries.

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MATHEMATICAL PROGRAMMING FOR ECONOMIC ANALYSIS IN AGRICULTURE

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PDF | On Aug 1, 1987, Paul V. Preckel and others published Mathematical Programming for Economic Analysis in Agriculture | Find, read and cite all the research you need on ResearchGate. Ignoring-risk-averse behaviour in farm planning models leads often to unacceptable results as agricultural production processes are inherently risky and farms' decision making is severally affected by risk and incertitude (Hazell and Norton, 1986). Positive model: the first objective of FSSIM is to be able to reproduce the observed production situation as precisely as possible by making use of the observed behaviour of economic agents (Janssen and Van Ittersum, 2007). Mathematical methods are the most important tool of the analysis of processes and the phenomena in economy, creation of the theoretical models, allowing to display existing communications in economic life. They allow to predict behavior of economic subjects and economic dynamics. As a part of economic-mathematical methods usually allocate such scientific disciplines, as economic cybernetics, mathematical statistics, mathematical economy and econometrics. The solution of tasks of the economic analysis mathematical methods probably if they are formulated mathematically, that is real economic interrelations and dependences are expressed with application of the mathematical analysis. As causes the necessity of development of mathematical models. A mathematical programming model is developed to simulate the potential performance of the proposed water bank in the Guadalquivir River Basin (southern Spain), considering society's demand for environmental water and different water scarcity scenarios. Results show that a maximum of between 5.8% and 10.4% of total water availability can be recovered for the environment, depending on the severity of the drought, while total economic efficiency is increased, yielding a beneficial result for farmers and society. View. Show abstract. Join ResearchGate to discover and stay up-to-date with the latest research from leading experts in Economic Analysis and many other scientific topics. Join for free. ResearchGate iOS App.