Book Reviews

Future Frontiers in Agricultural Marketing Research. Paul L. Farris (editor). Iowa State University Press, Ames, Iowa, 1983. Pp.vii + 341. $US35.00.

This book is a collection of papers dealing with research issues in agricultural marketing, prepared by a group of eminent U.S. agricultural economists. "The objective of this book is to help develop perspectives about research priorities in marketing, to conceptualize marketing problems in their new economic settings, to indicate the kinds of research approaches appropriate in various situations, and to suggest the kinds of commitments of resources that will be needed to solve the emerging problems". (p.13).

The volume contains 16 chapters. The first is an excellent overview by Farris "Agricultural Marketing Research In Perspective". It traces agricultu ral marketing research developments in the U.S. in a concise and well-referenced chronology from the early years of the twentieth century until the late 1970s. In looking forward, Farris sees two major factors affecting the performance of the agricultural marketing system, the kinds of marketing problems to be faced, and the methods used to analyse those problems. The first is the development of the infra-structure of the economy, while the second is the evolution of the goals and values of society.

While all chapters are well-written and thought-provoking, I found several to be of particular interest and relevance to current agricultural marketing problems in Australia. Chapter 2 entitled "Industrial Organization, Economic Power and Food System" by Marion and Mueller, is a neat guided tour of the application of industrial organization theory in agricultural markets. Following a review of empirical studies of various structure-performance relationships, the authors list some 11 areas of research they would place at the "frontier": these include the effects of vertical and contractual integration on competitive behaviour; the socioeconomic impact of food advertising; and structure-conduct-performance relationships in producer/first-handler markets. They also suggest some appropriate ways of organizing for industrial organization research programs.

Chapter 8 by Tomek "Alternative Pricing Mechanisms in Agriculture" is a most useful summary of current concerns about price discovery in agricultural markets. He discusses the critical importance of research in this field, conceptual ideas contained in past research efforts, an assessment of the impact of this past research, and proposes areas for future work. "Research-able areas include the analysis of new pricing mechanisms such as computerized exchanges, the longer standing issues of declining numbers of buyers and farmer bargaining, arrangements that permit timing of price discovery to differ from timing of delivery (e.g., futures markets), effects of thin markets, and transmission of prices through the marketing system ... Another important question is the welfare effect of alternative pricing institutions". (p. 159).

Chapter 10 by Torgerson "Alternative Ownership and Control Mechanisms within the Food System" follows a similar format to Chapter 8 and to most other chapters. Emphasis is given to co-operative action and vertical

co-ordination. A wide range of research questions is posed under these broad topical areas.

Other subject areas not mentioned above include intrafirm decision making (Babb and Lang); production agriculture (French and Carman); input markets (Lee); transportation (Casavant and Binkley); technology adoption (Ricker, Anderson and Phillips); data systems (Armbruster, Helmuth and Manley); preference articulation (Shaffer); consumer adaptability (Padberg and Westgren); health and safety regulations (Boehm and Lenahan); domestic food programs (Hiemstra); international marketing (Sorenson and Peterson); and marketing in developing countries (Riley and Weber). A perusal of these chapters suggests that most of the important marketing themes are included.

The book is superbly produced and easy reading. Each chapter is well referenced and there is an extensive index.

Reading this collection of papers has certainly maintained my enthusiasm for conducting research in the area of agricultural marketing. There are numerous research proposals listed in the various chapters and although many of the general questions of the early chapters are amplified and extended later in the volume, it is abundantly clear that there is much to be done. The book is concerned solely with agricultural marketing from a U.S. perspective, but most of the issues raised have direct and topical relevance to Australian conditions. Examples are the consequences of increasing concentration and vertical integration; the effects of alternative pricing systems; the problems and prospects for co-operatives; how large firms make decisions; and the welfare effects of regulated markets.

I believe the book has easily attained the objectives set and I recommend a place be found for it in individual or institutional libraries.

New South Wales Department of Agriculture, Armidale. G. R. GRIFFITH.

Mathematics for Social Scientists. Ki Hang Kim and Fred William Roush. Elsevier, New York, 1980. Pp. xiv + 227. $US13.00.

Economics and the other social sciences use mathematics as a tool in the processes of analysis of problems and the logical development of arguments. Mathematical models are now commonplace in the field of economics and such applied areas as agricultural economics. The mathematical basis of these models is, however, often not well understood by the model builder or the reader of published works relating to such models. Frequently comments are made that this or that paper was too mathematical. Such comments would seem to relate to a lack of solid mathematical training in our graduate and undergraduate programmes of study. Of course, this ignores the possibility that there are other equally deserving areas of emphasis. Kim and Roush have written a book which includes much of the basic mathematics which would provide a very solid background for an economist or agricultural economist along with other social scientists.

A mathematics text is not something that many people would use for recreational reading. The book by Kim and Roush is certainly not recreational reading. It is tightly written and very detailed. It is a book to be sampled by the researcher or a specific set of chapters used by the teacher.

The book is designed as a text for graduate or senior undergraduate students and must be evaluated in this context.

The book is in two parts with the first part providing the mathematical concepts required for the second part on applications. The theory of sets and binary relations is established in the first chapter and then used extensively throughout the remainder of the book. Boolean matrices, graphs, combinatorics, difference equations, differential equations, various topics in probability and cluster analysis form the theoretical material in the first part. The last chapter in Part I is a brief discussion of different types of models with comment on their areas of application.

Likely to be of most interest to economists are chapters 11 to 13 in Part II of the book titled "Economics", "Management", and "Political Science and Game Theory". Other applied areas covered include chapters on demography and ecology, psychology, sociology and transmission of information. The chapter on economics uses three different models to illustrate the application of the mathematical theory dealt with in Part I. The Arrow-Hurwicz model of a market is used and a proof developed for Walras's law Arrow's impossibility theorem is proved and comments made on related developments, and finally the mathematics of the Leontief input-output system is developed. This is a rather narrow choice of models from economics and does not take into account the vast array of models based in economic dynamics.

In the chapter on management the assignment problem, dynamic programming and optimal scheduling and activity networks are chosen as illustrations. The reader is simply referred to a book on operations research for linear programming. The assignment problem of assigning men to machines or jobs to consultants, etc. is used to illustrate certain properties of matrices and the standard Hungarian method is the solution algorithm chosen. Very brief illustrations are given of dynamic programming and critical path type analyses.

Political science and game theory are discussed in the following chapter. The focus is essentially on various forms of game theory from two-person zero-sum games, other two-person games, and N-person games. As in the other chapters the authors have concentrated on the mathematics of the problems with little in the way of comment on the research applications of these techniques.

As a text-book the book has two annoying features. First, the index seems to be based on the first reference only to an item and therefore does not provide the reader with the cross links often necessary when using a text. Second, a summary of the notation used and definitions of terms would have proved most useful to a student reader. The book is full of short exercises both in the theory section and the applied section and more difficult are marked with an asterisk. No answers are provided.

Overall, Kim and Roush present a mathematician's view of the mathematics used by social scientists. For economists the range of applications dealt with is very narrow and only illustrative. However, the theoretical base provided in the first part of the book is substantial and assuming the basic mathematical concepts have already been developed the book could be a most useful text for a mathematics service course to students in various social science areas. The dilemma the authors faced was to provide adequate coverage of the vast array of mathematical techniques and theory that social

scientists use, do it in an integrated fashion and also keep the book a reasonable thickness and cost. To a considerable extent they have met this objective.

University of New England, Armidale. T. G. MACAULAY.

Grain Export Cartels. Andrew Schmitz, Alex F. McCalla, Donald O. Mitchell and Colin A. Carter. Ballinger Publishing Co., Cambridge, MA 1981. Pp. xxi 298. $US35.00.

In the global grain market, the principal wheat exporters are Australia, Argentina, Canada, France (which exports soft wheat) and the United States of America. The main wheat importers are the Soviet Union, China, Japan, Western Europe (importing hard wheats) and countries in the Middle East and Latin America. As regards feed grains, the above exporters and importers predominate in the world market also.

Most of the grains produced are consumed in their countries of origin, however, about 190 million tonnes are traded annually, with the United States being the principal wheat and feed grain exporter. Grains are crucial to the world food chain as these account for about 75 per cent of food consumed, either directly or indirectly.

In this book, the authors hypothesize that the world grain market is a buyer's rather than a seller's market. This is partly due to the perceived use of trade barriers such as tariffs imposed by importers such as Japan and the European Community (EC10). Tariffs, as the authors indicate, if properly managed, can produce net economic gains to importers, provided world prices are below domestic levels. The authors argue that the formation of an exporter cartel could return some of the economic rent extracted by importing countries as a consequence of oligopsonistic buying.

The authors present numerous other benefits arising from an export cartel, including price and supply stability in the domestic market of the exporting countries. Food commodities could be used by the export cartel as bargaining devices in trade negotiations. The latter benefit would appear to apply principally in the dominant member of the cartel, the U.S., perhaps even to the detriment of non-industrialized members. Price conflicts would be prevented and major exporters would be able to maintain their market share. Grain cartels will, theoretically increase international prices so as to improve producers' incomes. Import barriers would be reduced because of greater seller power and higher international prices and lower domestic grain prices would eventuate.

A cartel which attempts to increase bargaining powers of exporters would be opposed in principle by the private grain corporations, five of which, the book claims, handle about 75 per cent of the global grain trade.

The authors distinguish between two types of cartels — a producer cartel, in which growers in exporting countries receive the benefits, and a government cartel whereby growers, livestock producers and consumers share the advantages. The difference between the two types of cartels is highlighted by the importance of livestock sectors in the grain exporting countries. In the U.S. this sector absorbs significant quantities of feed grains (as well as wheat as a substitute), while to some extent in all exporting countries, wheat is utilized directly by consumers in the form of bread and

associated edible products. These sections of the domestic economy of the exporting countries would more readily be able to participate in the alleged benefit of a cartel if it was established by the various Governments rather than producers alone.

As regards institutional arrangements and systems advocated by the book, exporters would have to agree on a set export price, below which importers could not negotiate. On the subject of importing countries' response, evidence to date is limited, however, the authors expect to move towards freer trade and reduced import barriers.

Quantitatively, the authors contend that the gains from an effective export cartel are quite significant. On the assumption of no increase in existing import barriers, a government cartel in both wheat and feed grains could achieve in excess of $US15 billion in benefits. The calculations substantiating this claim appear reasonable. Livestock producers in feed grain exporting countries using a cartel could also benefit from relatively low feed grain prices which it is assumed, would result from a reduction in the domestic price support schemes that have developed in some exporting countries. This benefit, again would not be as apparent in Australia.

Because of its pre-eminent position as both a wheat and feed grain exporter, the United States stands to gain the most, however, it is reasonable to assume that spillover benefits will flow to other exporters, such as Australia and Canada. This would especially be the case in the exporting of wheat where co-operation would be more important than in the case of a feed grain operation. In my opinion, the benefits would not carry over to Australia to the extent that the authors suggest. Because of the continuing substitution effect, an export cartel would probably have to embrace both wheat and feed grains.

Around the globe, protection of local agriculture is widespread, with policies designed to insulate domestic sectors from the vicissitudes of the global market. These include policies relating to the support of farm prices and incomes, maintenance of low food prices and the management of trade relationships to achieve national and economic aims. Quite correctly the authors contend that the political economy of domestic support policies must be taken into account in the wider ambient of world trade in a short run analysis of a grain export cartel. As far as grain exporters are concerned, the considerable continuing costs of farm programs could be charged against the benefits of a government grain export cartel.

In the realm of international politics, the authors briefly consider a number of issues which relate to global grain. These include world food security, the disposal of surpluses through programs such as Public Law 480 and grain embargoes. The most recent and significant embargo was applied by the US against the USSR, the world's leading wheat importer, after the Soviet invasion of Afghanistan. The U.S. subsequently became a residual supplier to the Soviet, with shares of the grain export vacuum being eagerly taken up by the major exporters of wheat and other grains.

Since this book was written the world economic depression has intensified and the international debt magnified. Both have affected developed, centrally planned and less developed countries. The global trade

demand for grain has not diminished greatly and the response by exporters, in the absence of a cartel, has been to offer an increased range of inducements to grain importing countries, as exporters strive to increase or at least maintain their respective shares of the global grain trade.

This situation reinforces the authors' identification of the power of grain importing countries. On the selling side, it may well be in the interests of exporters to explore the possibility of a grain export cartel, however for the same reasons the chances of achieving this objective appear remote.

N.S.W. Department of Agriculture, Sydney. N. R. BAKER.

Managing Agricultural Systems. Dalton, G. E. Applied Science Publishers, Essex, England, 1982. Pp. xxi + 161. $20.30.

In his book "Managing Agricultural Systems" Dalton has produced an easy to read exposé on the role of the manager in controlling agricultural systems within the larger, interrelating systems of the environment, the economy and the society.

Dalton states in his preface that his aim is to promote reflection, thought and discussion by professional people involved in agriculture; however, I do not believe this book will entirely succeed in this respect. The book falls short in that it is too simplistic and it collates points that most professionals in agriculture already perceive, it does not open new ground.

The introduction is well thought out and gives logic to the sequence of the following chapters, as well as being a good outline of each chapter. It entices the reader into the body of the work.

The description of agricultural systems is very simplistic and includes figures and tables which are not used to the fullest extent. The description is expanded to give a very favouristic view of modelling and its use in agriculture.

In the review of the effects of the environment (physical, economical and social) on agriculture Dalton has given a good overview, understandable to a non-economist, that is neither too complex nor too idealistic; but maybe a little opinionated.

The following five chapters explain the various aspects of managing agricultural systems: planning, control, recording, forecasting and implementation of managerial control. All these are well explained and neither too complicated or too technical. Reference is made to some sophisticated techniques but the book is not sidetracked with attempts to detail these and most are well footnoted if the reader wishes to know more.

Dalton has given a good insight into agricultural systems and the role and techniques of management in these systems. The book will not become a major topic or "thought provoker" amongst professional agriculturalists but it is a sound, easy to read introduction to anyone interested in agriculture and the decisions made by managers.

Hassall & Associates Pty. Ltd., Dubbo. GLEN ZELL.