

BOOK REVIEWS

Food for the Future, By K. O. CAMPBELL. (Sydney, University Press: Sydney, 1979.) Pp.178, ISBN 0424 00065 2.

It will be no surprise to those who know the author that this is a valuable book. It is small and the argument necessarily compact and often incomplete. The reviewer knows many bigger books on the same subject, but none, to his mind, serves so well as an introduction to the many facets of the subject and as a reminder of the complex nature of, but necessary interaction of, all these facets.

Written as a protest against excessive gloom about the global situation, the book nevertheless gives a realistic survey of factors involved and the kinds of policies called upon from national governments and from international agencies. It deals with agriculture in both developing and developed countries but naturally recognises where need is greatest. This does not prevent a few well-merited cracks about the irrational patterns of agricultural (and industry) protectionism followed by so-called advanced countries. These, however, seem able to afford a degree of irrationality: there is less room for it in Africa and Asia where population pressures on land and other resources are greatest.

It would be futile in a short review to follow the chapters through. They show the prospective increase in demand (derived mostly from population growth); the resource constraints such as land, water and energy (including fertilisers); the critical role of research in promoting necessary farm technologies. The author rightly stresses that research achievement is measured finally in a more effective whole-farm system.

The following chapters, perhaps less successfully than the earlier ones, show the extraordinary range of factors which have to be recognised in national policies designed to produce more effective farm systems and for which resources have to be mobilised. Thus, Campbell recognises the need for priority for agriculture in national budgetary systems and, more implicitly than explicitly, shows that investment or foreign exchange resources have to be marshalled to provide skilled manpower for research and extension; for provision of water, fertilisers and plant protection; for credit support; for reduction of risks; for land reform (e.g. consolidation of fragmented small holdings); for improved marketing facilities and for curbing post-harvest losses. The complexity of it all is daunting and the role of international agencies and bilateral aid is likely to be more effective when this complex, but nevertheless *total*, need is recognised both by the national governments in need and by the external agencies which offer assistance. Campbell is clear that the final responsibility rests with national governments—but he could perhaps have given more direct attention to the way all the many facets have to be welded together in a total rural and agricultural policy.

Inevitably the problem of possible conflict between increased production as the primary goal and the recognition of labour-intensiveness as a desirable, in many cases necessary, feature of farming is raised by Campbell (p.110). But the treatment is too thin to be sufficient: case studies beyond the bounds of his book are required. Thus no Indian Govern-

ment could deliberately promote mechanisation if this merely meant adding to the vast unemployed pools in Bombay, Calcutta and other large cities. On the other hand, it is recognised now that there is vast rural off-farm unemployment and considerable underemployment on farms which call for much off-farm investment in public works (roads, markets, schools, sanitation of villages etc.) as well as in local small-scale industry. Such employment is the more needed as farm productivity rises—as recent Indian experience has shown, some of the buildup in food stocks is simply a reflection of inadequate employment (and hence purchasing power) in rural areas where no national food distribution system is present or even very feasible.

I repeat: this is a good book. I would like to think that it could be the basis of one-semester courses in Universities and Colleges of Advanced Education to ensure that more graduates move into our society with an understanding of one of the basic problems all of us have to solve. The course could include some national case studies—which in a second edition would greatly enrich the book. The doom-sayers against whom Campbell protests have had the field too much to themselves. The message in this book is not that there is no problem. There is and it is complex: but if we recognise its nature we can deal with it. I, for one, believe the levels of understanding and performance both in national and international terms have improved greatly in the past decade. But there is no room for complacency—and none will accuse Campbell of that.

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Food, Energy and Society. By DAVID and MARCIA PIMENTEL. (Edward Arnold Publishers: London, 1979.) Pp.165, ISBN 0 7131 2761 9.

Despite the suggestion in the title, this book is largely devoid of any economic content.

The authors state in their preface that, 'the aim of this book is to explore the interdependencies of food, energy and their impacts on society. These analyses, we hope, will be a basis for planning and implementing policies of individuals and nations as they face the inevitable dilemma—how can everyone be fed, given the limited resources of the earth'.

The analytical 'basis' suggested by the authors is the energy ratio, or the ratio of energy output to energy input in the production and consumption of particular goods. Consequently, the authors suggest that food production systems requiring relatively small energy inputs should be favoured at the expense of more energy-intensive systems. The pitfalls of using energy ratios in this normative sense have been outlined elsewhere in this *Journal* (see Vol. 20, No. 3, pp.179-92).

The first five chapters of the book read like Dr J. Bronowski's, *The Ascent of Man*. The authors trace the path of civilisation from 'low energy' hunter-gatherer societies through swidden agriculture and the use of animal power to the development of engines run on fossil fuels to produce food in relatively high energy use systems.

Throughout Chapters 6 to 11 the authors concentrate on measuring energy ratios without considering any of the non-energy factors influencing dietary choice and production decisions. For example, they deplore the energy 'waste' of New Yorkers consuming Californian-grown

strawberries and farmers spraying weedicide with tractors rather than by hand.

The concluding chapter leaves the reader somewhat confused by the introduction of new material. For example, the previous chapters all concentrate on energy as the most important constraint on food production, whereas the concluding chapter introduces a short discussion on land, water, climatic, pollution and environmental constraints. The authors predict declining living standards, overpopulation and starvation and propose some vague strategies for alleviating these problems. For example, 'consumer preferences for animal protein may have to be modified' (how is unspecified). The implication is that, by turning toward vegetarianism, energy use will decline and the world's ability to produce enough protein will be enhanced. Another strategy which the authors propose is the development of 'socially acceptable substitutes for large families', with each individual accepting the responsibility to reduce population growth. The reader is left with the feeling that the problems are immense, but that the answers do not lie in simply reducing our population growth or our energy use in food production.

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Economics and the Design of Small-Farmer Technology. Edited by ALBERTO VALDÉS, GRANT M. SCOBIE and JOHN DILLON. (Iowa State University Press: Ames, 1979.) Pp.211, ISBN 0 8138 1910 5.

This book presents the proceedings of an International Conference on Economic Analysis in the Design of New Technology for Small Farmers, held at the International Centre for Tropical Agriculture (CIAT), in Columbia, in November 1975. The conference papers, plus discussants' comments, have been placed in three groups: I. Methodological Aspects; II. Design of Technology; and III. Technology, Rural Development, and Welfare. They are preceded by the editors' introduction, which briefly outlines the background to the conference, summarises the papers, and suggests issues for further research. The book is nicely rounded off by a complete list of references and author and subject indexes.

The conference was a response to widespread concern about the distributional impact of new agricultural technologies in Third World countries. Its specific focus was the use of economic analysis in *ex ante* appraisal of possible new technologies designed for small farmers. The research papers and policy discussion at the conference concentrated on the design of new technology for Latin American farmers; there is little discussion of Asian circumstances and no mention of Africa. Many, if not all, of the papers were updated prior to publication of the book.

Failure to adopt new technologies, and its consequent distributional impacts, may be attributable to a wide variety of factors, ranging from the limited resource base and personal circumstances of the individual cultivator to deliberate monopolisation of new technology by elites determined to maintain their economic and political dominance. Just which of these factors apply makes a huge difference, not only to the guidelines for technology design but also, as Scobie points out on p.195, to whether

technology design, as opposed to institutional and sociopolitical change, will have *any* effect on distribution. Most of the conference papers simply assume, without any supporting empirical evidence, that the major barriers to adoption are located at the farm level rather than in the social system surrounding the small cultivator. While this approach makes the task of modelling the appropriate system somewhat easier, and is doubtless in accord with the range of staff expertise available at international research centres such as CIAT, the book provides little evidence that it will lead to successful propagation of new technologies among small farmers in Latin America.

The broader perspective on factors constraining adoption is presented in the last two chapters of the book, where Dillon and De Janvry discuss the characteristics of small farmers, their problems, and alternative socioeconomic explanations of how the problems originated. Readers with a general interest in economic development, who are not conversant with the 'small farmer'/'choice of technology' literature, would be well-advised to begin with these chapters (Chapters 10 and 11) and then read the editors' introduction (Chapter 1) as a guide to sampling the more specific material in Chapters 2 to 9. Both Dillon and De Janvry are doubtful that new technologies alone can appreciably improve the small farmer's lot, with De Janvry emphasising the interrelationships between social relations and technology choice. (Incidentally, I found De Janvry's brief statement of the centre-periphery theory at the beginning of Chapter 11 easier to follow than the longer exposition in the *American Journal of Agricultural Economics*.)

The only other paper which considers small farmers' relationships with other segments of society is Scandizzo's (Chapter 8). He presents a mathematical model of the sharecropper-landlord relationship in Northeast Brazil and uses it to derive hypotheses about the attitudes of each of the parties to land- and labour-augmenting technologies. However, without supporting empirical analysis or an assessment of the sensitivity of the conclusions to alternative specifications of individual behaviour or share-contract provisions, the model has little immediate relevance for technology design.

The remaining papers all focus on the individual farmer/holding. They include a general review of alternative farm modelling techniques which may be useful in evaluating new technologies (Chapter 2), two papers on small farmers' attitudes to risk (Chapters 3 and 4), a biologist's comments on the desirable interactions between biologists and economists in developing new technologies (Chapter 5), two examples of *ex ante* modelling of small-farm production systems used to suggest appropriate new technologies (Chapters 6 and 7), and an *ex post* analysis of the technical and economic reasons for different rates of adoption of crops in a Columbian rural development project (Chapter 9).

The latter group of chapters, together with accompanying comments, provide a valuable overview of alternative techniques and the major issues (particularly farmers' attitudes to risk) involved in farm-level modelling in Third World countries. Readers unfamiliar with this literature will find Anderson and Hardaker's review of modelling techniques, and Roumasset's comprehensive and provocative paper on the unimportance of risk aversion as a determinant of resource allocation on low-income farms, particularly useful. The other chapters, dealing with

specific farm situations and modelling techniques, will be of more interest to specialists. Very little of the subject matter is peculiarly related to small farmers, however defined; all the techniques and issues discussed could be relevant in evaluating technology for farms of any size.

Summing up, this book is valuable as a 'warts and all' illustration of agricultural economists' recent attempts to come to grips with the problem of identifying appropriate new technologies for Third World farmers, and the practical difficulties involved. I recommend it to agricultural development specialists on that basis. For the reader with a general interest in agricultural development, the general chapters make it worthwhile to extract the book from your library, but be warned that the papers have been ordered with the specialist, rather than yourself, in mind. Finally, this reviewer is left with severe doubts about the value of separating 'small farmers' as a target group for technology design, at least until the design process is broadened to include institutional and other complementary changes.

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An Introduction to Agricultural Systems. By C. R. W. SPEDDING. (Applied Science Publishers: London, 1979.) Pp.169, ISBN 0 85334 823 5.

Spedding's book describes agriculture from a systems point of view highlighting the multidisciplinary, diverse nature of the subject. Such description represents the first step in 'a systems approach' to agricultural problem solving and research.

The basic principle involved in 'the systems approach' is quite logical and simply stated. Spedding explains it as a '. . . way of looking at the world and of tackling problems (is) founded on the idea that it is necessary to identify and describe the system that one wishes to understand, whether in order to improve, repair or copy it, or to compare it with others in order to choose one' (p.18).

There is nothing new about the systems approach. Pascal (1623-62), for example, once said that '. . . I find it as impossible to know the parts without knowing the whole, as to know the whole without specifically knowing the parts'.

Despite the apparent logic of the systems approach, the bulk of modern research effort is primarily disciplinary in nature with parts of a system often studied in virtual isolation. Why has the disciplinary approach evolved and persisted and why the increased interest in the systems approach?

Disciplines have their value. They 'serve as permanent reservoirs of a particular kind of knowledge about particular things, of special skills, laws, attitudes of mind and of a particular kind of people. The danger of such permanence is, of course, that of getting into a rut, of mistaking rigidities for useful frameworks . . .' (p.81).

Many of the problems that can be solved by a predominantly disciplinary approach have to a large extent been solved but more complex systems-type problems remain and are increasingly pressing. Such problems include world food and energy shortages, environmental issues and social and economic instability. No one discipline can hope to make

much progress in these fields; hence the need for a multidisciplinary systems approach.

Spedding's description of agricultural systems starts with a discussion about the purposes of agriculture (Chapter 1) and about how the systems approach is particularly relevant to agricultural problems (Chapter 2). In Chapter 3 he discusses ways of looking at agriculture and problems of system description which are encountered in a systems approach. He stresses the value of diagrammatic representations of many different types as an aid to system description.

Aspects of biological efficiency are discussed in Chapter 4 and these are put into the context of economic efficiency in Chapter 5. The point is made that isolated measurement and improvement in biological efficiencies is largely meaningless until the full value of the costs and benefits is determined.

Chapter 6 deals with the contribution of science to agriculture, and Chapter 7 looks at ways of classifying agricultural systems—a further dimension to the problem of describing systems. Spedding then uses a very broad basis of classification to review briefly the major types of agricultural systems important in the world today. He describes subsistence farming and shifting cultivation (Chapter 8), pastoral nomadism (Chapter 9), mixed farming systems (10), crop production systems (11), animal production systems (12) and industrial food production systems (13).

In Chapter 14 he discusses the relative efficiency of production systems or at least the problems of defining and measuring relative efficiency.

Chapter 15 is a rather philosophical discussion about the importance of agriculture to the whole community and how a truly educated citizen ought to know what agriculture is about and why it matters.

Spedding's style is conversational and easy to read; however, the flow of ideas and discussion from topic to topic and from chapter to chapter is not very smooth. The general theme of the book is sometimes obscured by peripheral (albeit interesting) discussion and the reader may be left wondering how it all ties together. The book lacks a logical conclusion or summation.

A commendable feature of the discussion throughout the book is the emphasis on agriculture as an energy processing system. While much of modern agriculture is dependent on inputs of 'support energy' in the form of machinery, fuel, fertiliser etc., Spedding also points out '... the great virtue of agriculture is that it can harness current solar radiation in the production of food and fibre, and potentially for fuel if necessary. No other industry can do this to any worthwhile extent' (p.47).

Another feature of the book is the extensive use of illustrations, tables and analogies. The illustrations are numerous (47) and of every conceivable type, in keeping with the author's observation that no one picture can represent all possible viewpoints about a system. The tables are even more numerous (59) and serve to support the discussion about the diversity and complexity of agricultural systems. Analogies are also used to good effect and succeed in providing '... an insight that is difficult to acquire by direct study' (p.82).

The book is essentially the author's view on agricultural systems and systems thinking. The reference list relates predominantly to statistical material in the tables and not to other 'systems' literature. Further

reading is suggested but mainly in the field of general agriculture rather than general systems thinking.

Nevertheless, the book is a worthwhile introduction to agricultural systems at an undergraduate or general interest level.

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Systems Simulation in Agriculture. By J. B. DENT, M. J. BLACKIE and S. R. HARRISON. (Applied Science Publishers: London, 1979.) Pp.180, ISBN 0 05334 827 8.

This highly readable book can be recommended as an introductory text on the development and application of simulation models in agriculture. Most such texts read like a cookbook in which detail on advanced topics is freely included with the basics. Hence, the systematic treatment of the various steps in construction, validation and use of simulation models used in this book, is welcomed. Referencing in this context is not extensive but limited to a manageable number of appropriate texts in each area covered.

Validation of models is handled sensibly. Validation is a continuous process even while models are in use and should be approached in terms of whether the model is adequately representative for the purpose in mind. Thus prescriptions for 'sufficient' validation just cannot be given. Judgment, the authors emphasise, is essential in this and other steps in model building. There is appropriate detail on stochastic specification in, and the design of, experiments with models. Too often, researchers have concentrated on construction phases of modelling, with little planning of ways in which the model is to be used. The discussion on model application is interesting. In addition to the obvious potential in assisting managerial control and development in agriculture, topics such as the role of simulation models in assisting policy formation and directing research receive useful treatment.

For teaching purposes, the 'workshops' following some chapters are valuable. However, these could have been much more comprehensive and searching—perhaps an accompanying work-book might be useful. To assist exposition, two applications of systems analysis are used throughout the book. Various facets of these case studies are discussed in detail to the point of presentation of charts on system dynamics. However, the absence of computer programs for these case studies limits their usefulness for teaching. In this regard, the one listing of a complete computer program, namely a 'steepest ascent' algorithm, is misplaced.

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Information Systems for Agriculture. Edited by M. J. BLACKIE and J. B. DENT. (Applied Science Publishers: London, 1979.) Pp.176, ISBN 0 85334 829 4.

An increasing range of information is used by decision makers at all levels of the agriculture industry. It is a most productive resource when

properly managed and, as agriculture continues to develop in complexity, the need for its good management increases. Information systems are central to information management, and although they have long been in use in agriculture, their formal study is in its infancy. Blackie and Dent have edited eight invited contributions to produce a well-written book which provides a broad review of the concepts and current applications of information systems in agriculture. Its concern is with applications to business and economic aspects of agriculture, chiefly with computerised systems for use at the farm level. Applications to technical information at the various levels of the industry regrettably receive minimal attention.

The eight chapters are arranged in pairs into four parts. The first part is concerned with the technology of information systems, providing an introduction to their concepts, purpose, structure, organisation and management. The treatment is brief, but justifiably so. Good books devoted entirely to these aspects are already available, although not directed at agriculture.

Parts 2 and 3 are concerned with farm level information systems. In Part 2, the management task involved in whole-farm planning and control is outlined, revealing the kind of information that a management information system would have to provide. Those with a knowledge of farm management will find little new here. Blackie and Dent contribute a chapter in which they review several current farm information systems. These range from single process examples such as fertiliser planning, through integrated pest management control, to farm records, and to more comprehensive integrated planning and control. Part 3 is devoted to alternative computing facility configurations. In Chapter 5 an examination is made of the difficulties in operating a central computer facility to which users gain access by past or remote terminal. Problems covered include seasonality of workload, system modifications, security, turnaround and farmer motivation. In a second chapter, an alternative computer facility, the on-farm microcomputer is considered. That this type of facility is not being widely used and exploited at the moment is '... largely because the sheer speed of technical change has outstripped the ability of the farm management world to develop and refine practical applications' (p.129). Certainly, hardware and its cost will not be problems; usable, conversant and instructive software, and its maintenance, may be.

The final part of the book is concerned with applications at higher levels of the industry. In Chapter 7, a review is made of the role of information in attaining operating and pricing efficiency in agricultural marketing. The Alberta Hog Producers' Marketing Board's computerised auction is described as an example of an operational information system at the industry level. In the final chapter, C. H. Riemenschneider and J. T. Bonnen consider national agricultural information systems. The USDA information systems for prices and aggregate farm income are assessed, and used to highlight the interrelationship between the information system and the users of the information. In many respects this chapter is the most useful in the book for, despite its nominal emphasis, much of the material is relevant to information systems in general.

What is presently lacking, and what formal study will produce, is a theory of information systems. This inevitably will be a branch of

economic theory, and will include the developing theory of information. The theory will establish principles of system design, organisation, management and evaluation. Riemenschneider and Bonnen present an information systems paradigm in the final chapter. It is a step towards the needed theory. By discussing static and dynamic characteristics of information as a good, they raise issues relevant to the supply of information. By emphasising that information has value only to a decision maker, they raise issues relevant to the demand side. Such considerations suggest circumstances in which the market allocation of resources to information systems is unlikely to be socially optimal. How information systems might be modified through intervention, and the effects of intervention on efficiency and equity, are further important aspects.

Agricultural economists actively engaged in studying information systems are unlikely to learn much from this book. Such is the nature of a contemporary review. For others who wish to come abreast of applications and developments in agricultural information systems, this book should prove well worth reading; but do not delay. This book will soon be out of date.

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Production Economics: Theory with Applications. By JOHN P. DOLL and FRANK ORAZEM. (Grid Inc.: Columbus, 1978.) Pp.406, ISBN 0 88244 118 3.

Aimed as an introductory text in agricultural production economics, this book well achieves its purpose. It is well edited and printed, and includes a satisfactory index. With the few provisos noted below, I recommend it highly.

Following an introductory chapter outlining the disciplinary setting of production economics, Chapters 2 to 5 (for the short run) and 7 (for the long run) present the traditional neoclassical theory of production under perfect competition. Presentation is geometric and algebraic, all excellently done. In particular, in this basic theory section, I liked the integrative presentation of production and cost functions in Chapter 2, and the treatment of necessary and sufficient conditions for economic efficiency in Chapter 3 and of Euler's Theorem and factor returns in Chapter 7.

Chapter 6 covers the production process through time. Topics treated include discounting, time as an input factor, cash flow analysis, durable inputs and investment appraisal. Surprisingly the phenomenon of inflation and its analytical handling in planning is not discussed.

In comparison with the general excellence of the remainder of the book, I found the treatment of decision theory in Chapter 8 most disappointing. The obvious cause of the poor presentation is that the authors have not, as yet, been able to free themselves of the concept (scientific fiction would be a better descriptor) of objective probability. In consequence, they equivocate and endeavour to spread their bet by presenting the reader with a portfolio involving both the discredited Knightian approach and the modern subjectivist approach—though the latter is not presented fairly since it is treated as being relevant only when 'objective'

probabilities are not available. Game theory and E-V analysis are also briefly introduced. The chapter would have been both more correct and far less confusing to students if the authors had taken a fully subjectivist view, dismissed Knight's distinction between risky and uncertain decisions as erroneous, omitted game theory as insufficiently relevant, concentrated on providing an introduction to Bayesian decision theory and utility analysis (via both payoff matrices and decision trees, including the certainty equivalent approach), and related producers' risk attitudes to such strategems as diversification, flexibility, contracts and insurance. Thus, Chapter 8 needs a substantial rewrite. Since the authors are obviously on the verge of conversion to the subjectivist view and as the book overall warrants a second edition, I believe there is a 78 per cent chance that such a revision will occur by 1986.

Chapter 9 provides a relatively comprehensive introduction to the essentials of linear programming. This is supported (Appendix II) by an introduction to nonlinear programming. Though the concept of gross margin is used, it is disappointing to find the authors either so unaware or so disdainful of the international literature that the term itself is not used. Too, in my view, this chapter would have been significantly improved by some discussion of simplified programming and an outline of risk linear programming in its MOTAD form.

The above criticisms of Chapters 8 and 9 can be interestingly put in context against the author's definition (p.ix), paraphrasing Alfred Marshall, of production economics as 'the study of decisions farmers must make in the course of their everyday life'. In this sense, and without denying its relevance as theory, the theory of production under perfect competition is not really where the tractor or the hoe meets the dirt from the farmer's view. To get where that happens and make a normative contribution, we need gross margins analysis, budgeting in its various modes, simplified programming, linear programming and its risk variations, and – particularly in its decision tree form – decision analysis. All of these topics receive, in Chapters 8 and 9, far less comprehensive treatment than does the traditional neoclassical theory of production in Chapters 2 to 5 and 7.

In their tenth, and final, chapter, Doll and Orazem present a most lucid historical perspective of the U.S. agricultural sector. This they use as a matrix in which to show the macro implications of production theory as economic development proceeds and to illustrate the principles of production economics as they relate to such topics as credit, technological change, regional competition and agricultural adjustment.

Throughout, the book is very well written with excellent integration of theory and illustrative empirical examples. An explanation of the use of notation, geometry and elementary differential calculus necessary for understanding of the text is well provided in an appendix for those who need such assistance. Suggested readings are given at the end of each chapter, and relevant problems and exercises are given at the end of Chapters 2, 3, 4 and 5.

Reflecting the authors' background and interest, the text is implicitly biased towards US usage. However, given the appositeness of the empirical material presented relative to the principles under discussion (and this is true even for the sectoral analysis of Chapter 10), I do not see its US orientation as a significant impediment to usage of the book outside

of the U.S.A. so long as students, particularly those in non-modern agricultural settings, are also presented with empirical examples of indigenous relevance. Non-US users and even those in the U.S.A., however, would be well advised to ignore the authors' suggestion (p.309) that Jensen's review of production economics in Volume 1 of *A Survey of Agricultural Literature* (sic) be used as supplementary reading to the text. The Jensen material is far too parochial.

The only printing errors I noticed were a few names and some obvious mislabellings in Figures 2.4A and 10.3. The algebra I sampled showed no printing errors.

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The Common Agricultural Policy of the European Community. By ROSEMARY FENNELL. (Granada: London, 1979.) Pp.243, ISBN 0 246 11197 6.

A major difficulty confronting the teacher and the student of agricultural policy is the absence of a comprehensive reference text relating to a particular policy issue. Invariably, one has to hunt through numerous journals, selectively read a host of official records of Parliamentary debates or wade through the annual reports of statutory marketing authorities. Where, for instance, will the teacher, or student, find an introductory text that will explain the rudiments of Australian wool policy, or the mechanism of Australian wheat pricing? The difficulty is, of course, compounded when the policy issue relates to an overseas country whose official language is not English.

Dr Rosemary Fennell recognises this difficulty and her book attempts, with considerable success, to explain how the Common Agricultural Policy (CAP) of the European Economic Community (EEC) works, how it is administered and financed and what aspects of agriculture it covers. Dr Fennell admits that a considerable amount of explanatory material does exist about the CAP, but rightly points out that 'it is either very brief or deals with certain aspects of the policy only, or at the other extreme is too detailed for any other than the specialist'. Her book steers a middle course between these two extremes.

Dr Fennell identifies four major aspects of the CAP—the administration of the policy, its financing, the organisation of the market and price system and, finally, the social and structural measures of the policy. Each aspect is dealt with in considerable detail.

The administration of CAP is the prerogative of four major institutions—the Commission, the Council, the Parliament and the Court of Justice—supported by lesser bodies, such as the Economic and Social Committee and the European Investment Bank. The development, over the years, of the CAP is the result of regulations, directives and decisions emanating from the Council and the Commission—all of which having legislative force. The administration of the CAP also reflects the national links which have been forged between the EEC itself and its member states. Dr Fennell illustrates these links by reference to British experience and explains the role played by the British Government in respect of initiating, or opposing, proposed changes or developments in the CAP.

Two chapters are devoted to financing the CAP. Chapter 5 is concerned primarily with the budgetary aspects of the CAP—the size and composition of the budget, and the exercise of control over the budget—and the development of the European Monetary System. Chapter 6 is a short, but illuminating, one on Green Money—the unit of account used under the CAP. Dr Fennell provides the reader with a clear explanation of the mechanism of this unique money system, paying particular regard to its implications and its future.

The four chapters on price and market strategies are descriptive and amount to a catalogue of price and market strategies relating to a large variety of field crops, horticultural crops and livestock and livestock products—strategies which are consistent with the EEC's initial vision that the market for agriculture should be a managed one rather than the free market which was being created for other sectors.

Chapters 11 and 12 deal with on-farm structural and social policy measures. Detailed accounts are given of a number of measures that have been adopted to improve the structure of European agriculture and to provide social aid for disadvantaged farmers.

Any book which attempts to explain, rather than analyse, policy inevitably becomes encyclopaedic. This is true of Dr Fennell's book. This is not intended to be a criticism of the book, for Dr Fennell is to be congratulated not only on the extent of the research that preceded its writing, but also on the very clear way in which it has been presented. But it is, as an introductory reference text, essentially concerned with the facts, the details, and the mechanism of the CAP. To that extent, the book will be a disappointment to those readers who, through its title, may have expected a critical evaluation of the CAP.

On the other hand, it will provide the reader with a mine of information, and save hours of search, on an issue which is both complicated and little understood. It is perhaps too detailed and specific to be recommended as a prescribed text in any course on agricultural policy, but it should be a required reference book for any teacher of policy and will certainly be a much-thumbed book on the shelves of university and college libraries.

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