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## BOOK REVIEWS

*A Shared Harvest: The Australian Wheat Industry, 1939-1989.*  
By GREG WHITWELL AND DIANE SYDENHAM. (Macmillan Education Australia, Melbourne and Sydney, 1991.) Pp. xi + 324, ISBN 0 7329 0584 2.

Greg Whitwell and Diane Sydenham are two University of Melbourne economic historians who were commissioned to write this book by the Australian Wheat Board as part of its fiftieth anniversary celebrations. But the independence of the authors is stressed in the preface, and indeed they adopt a critical approach to the role of the Board at several stages in their account.

The theme of the book is that wheat has been a shared harvest in Australia over the last half century. The principal sharing has been among growers through the various marketing plans which have operated since 1948. The forces which led to the stability of these arrangements until 1979 and to their erosion since then are what the book is largely about. But there are other sharings — with the rural community and other industries. Indeed, the dilemma as to whether wheatgrowing is a separable *industry* is acknowledged early in the book but never resolved.

The book is in three parts. Part One is a resumé of the history of the industry's development and politics to 1948 and an overview of its production statistics since then. It sets the scene for the subsequent discussion of the events of the last 50 years. Of most interest for the principal theme of the book is its account of the ad hocery of policies during the depression and war years which led to *stabilisation* being embraced as a sacred cow from 1948 onwards.

Part Two considers the major influences which have moulded the growing of wheat since 1939. Its argument is that until the 1970s the industry was *production* driven and grower attitudes were remarkably cohesive. Policy was to increase production irrespective of the nature of demand and to share the rewards and costs across a wide base, both within the industry and with the community generally. A shift occurred during the 1970s and 1980s which saw both the industry and the community become more concerned with questions of *efficiency*, and grower divisions became much more pronounced.

Part Three deals with the international environment in which wheat is sold. The focus shifts from growers to the activities of the AWB, though its relationships with growers remain of paramount concern. What emerges is a sharp break in outlook and methods used by the Board from the late 1970s onward, in part as a result of a changed commercial environment within Australia and in part as a response to an increasingly quality conscious world market.

Three chapters in Part Two provide the core of what the book is all about. Chapter 9 (*The quest for stability: 1948-74*) deals with how the common ingredients of the six *plans* which operated until 1978, and which constituted a wheat stabilisation *scheme*, came to be put together. These were a *guaranteed price* and a *home consumption price* (both cost-of-production based with some modifications in the fifth and sixth plans); a *stabilisation fund* and *compulsory pooling*; and the creation of the *Australian Wheat Board* as sole buyer and marketer of wheat. Objectives for the scheme were never made explicit, but they have been inferred to be to stabilise prices and farm incomes; to increase efficient resource use by reducing risks; and to expand production for both domestic and export markets. The stability of the scheme suggests that its objectives could be re-ordered but not changed. Stability of incomes and domestic prices dominated at first but from the early 1950s until the late 1960s the expansion of production was pre-eminent.

The authors show what a can of worms the cost-of-production exercise turned out to be. This, of course, was the *bête noir* of agricultural economists from the inception of the scheme. (Keith Campbell is the most quoted spokesman for the profession.) The authors also raise other problems close to the hearts of agricultural economists: the inefficiencies of resource allocation induced by the equalisation of prices; the fact that export industries unrelated to wheat bear the cost of home consumption pricing; the regressive nature of the home consumption price; and the potential need for production controls. The *ex post* analyses of agricultural economists of the inadequacies of the plans to stabilising either prices or incomes are also documented.

Yet despite the criticisms of the agricultural economists, the scheme continued to retain great popularity among growers and governments. Chapter 10 (*Maintaining the status quo: 1949-74*) addresses why this was so and the actions growers took to keep the scheme in tact. What set the post-war plans apart from the pre-war arrangements was the prominent roles taken by grower organisations in determining policy. A brief snapshot is given of Sir Leslie Price epitomising farm leader attitudes between the Australian Wheatgrowers' Federation and the Liberal/Country Parties governments which negotiated the second to the fifth plans. The longevity of the scheme is explained by its intricate set of interdependent parts, each of which could be adjusted but none could be removed without bringing the whole down.

But by 1989 the whole edifice of stabilisation was on the brink of collapse. Chapter 11 (*The drive for greater efficiency: 1974-89*) traces the changes over two decades which brought this about. Some commentators have said that the seeds of change were sown in the structure of the fifth plan (1968-74) which weakened the status of cost-of-production pricing and broke the nexus between the guaranteed and home consumption prices. The authors assert that this was not so. That plan was defensive of the inherited structure; it did not challenge it.

But seeds for change were sown during the fifth plan with the introduction of quotas. Although the stabilisation scheme did not cause the surplus problem which gave rise to quotas, the equalised price and level of the first advance gave farmers entirely the wrong message about the need to reduce sowings. Furthermore, with the introduction of quotas and the gap between the domestic and guaranteed prices, some farmers (albeit illegally) were forced to sell their own crops and found they could do it quite successfully.

Although the new Labor government had no reverence for the *status quo*, the sixth plan introduced in 1974 was a compromise. But it was the change introduced by Labor to the process of policy formation which catalysed the demise of stabilisation as it had operated for three decades. The authors give an account of the radical new role of the Industries Assistance Commission in the formulation of the next three plans. Debate now took place openly. Nothing about prior arrangements was considered sacred. Fundamental questions were posed publicly and hollow assertions and impassioned pleas were given short shrift. The approach was austere economic and rational. While the first of the three reports made most impact and the Commission's influence waned in its later reports, the sense of questioning persisted.

The authors take us progressively through the arguments and events leading to the demise of the stabilisation fund (1979), the final death of cost-of-production pricing and the introduction of some legal domestic selling outside of the aegis of the AWB (1984), and the complete deregulation of domestic sales and abandonment of a *stabilised* price (1989). Although the export monopoly of the AWB and a price guarantee (based solely on expectations for the coming season) remain, the impression is left of a victory for the economic rationalists.

Yet it is not the assault of economic logic which the authors consider won the day so much as the commercial necessities for change. This is illustrated convincingly in the account in Chapter 13 (*Discriminating buyers: a quality-conscious market*) of the transition from the FAQ standard which operated without any segregations until the late 1950s to the introduction in 1989 by the AWB of payments for quality, requiring the massive introduction of testing facilities at receival depots. The introduction of separate guaranteed prices for different categories of wheat in the 1984 plan had itself been an assault on the concept of equalisation, which Ian Wearing (the Executive Director of the AWF in the early 1980s) described (approvingly) as 'breaking the brotherhood of growers'.

*A Shared Harvest* is a valuable account of an era which saw Australian wheatgrowing assume a national identity and an international significance. Perhaps it suffers from being written too much in isolation from other developments in agricultural policy during the period and wider micro-economic reforms which have occurred since the early 1980s. But it is a good read, and highly to be recommended

for those who wish to get an appreciation of the policy formation process as well as the content of policy.

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*Use with Care: Managing Australia's Natural Resources in the Twenty-First Century.* By DOUG COCKS (New South Wales University Press, Kensington 1992.) Pp xiv + 344, ISBN 0 86840 303 3 (Paperback).

In the coming decades, Australia will face continued conflicts in the management of its natural resources and new opportunities to resolve these arguments. The most important contribution that any individual can make to resolve these conflicts is to offer a perspective on resource management, and so improve the community's capacity to manage its resources. The need to settle these disputes is the author's rationale for his book, and his perspective to help build this capacity is his contribution. As he argues in the final chapter, individual effort can make the world a better place.

The author's goal is to improve the management of Australia's natural resources, and his way of doing so is to influence the thinking of individuals. His audience is wide, in fact he addresses everyone. He believes that it is still possible to satisfy all but extreme materialists and extreme environmentalists, and this possibility becomes the implicit function to be maximised in making choices.

The headings and subheadings are entertaining, but more importantly, they tell the story. The first four chapters set the scene in terms of learning the hard way, taking stock, gazing out to sea, and patterns in the dust. The next five concern thumb sucking, technology and resource management, coping with god and human, how many people, the land ownership question and is anybody in charge? The final chapter, entitled 'Stepping back for a look', exhorts the reader to a systematic approach to life and resource management. We are urged to consider beliefs, define goals, draw up policies, identify programmes and select instruments to achieve the goals. The heading for this beliefs-instruments process, 'a powerful procedural theory of resource management', understates the role of the only useful process for making decisions. The final subheading in the book urges us to 'think twice : keep thinking'.

Policies are offered for the management of particular resources. For example, the proposed conservation strategy comprises inventory, legal protection of native species, management of reserves to exclude humans and other feral animals, and encouragement to all landholders to minimise loss of species. The planks of an energy policy include exploration, conservation, substitution, research and contingency plans for sudden shortfalls. These programmes emphasise renewable clean energy sources and limits to energy use.

In his preface, the author declares his biases and claims to have none. His professional environment, like a natural-resource conflict, is characterised by battles between ecological conservatives and economic conservatives. In the midst of all this, Doug Cocks claims to be an olive-skinned neutral appreciating the values of both greens and browns. However, the reader might get the impression that the author's skin is in fact brownish-green. He advocates, for example, that only clean energy should be generated and then should be used only in limited quantities. He argues that property and land should be leased from the government and not sold, in order to retain community control over resources. Such are the arguments of the greens.

The content of the book as a whole is, however, eclectic. At times, the author espouses welfare maximisation as the proper goal, and the competitive market as a means to achieve it. At other times, he promotes biophysical concepts and environmental guidelines. He advocates opportunity cost, marginality and substitutes as relevant concepts in developing a conservation strategy, and argues that environmental management must embrace charges for use of community resources, taxes on effluent discharges, and creation of tradeable emission rights. These market suggestions are then placed side by side with environmental arguments of dubious economic content. For example, socially-optimal use of non-renewable resources requires decreased use, and primary producers should be required to manage their lands according to a vegetation plan approved by government. The juxtaposition of such widely divergent kinds of argument might concern the disciplinary purist. But what ought to concern the purist even more, is the possibility that Doug Cocks may be right. Perhaps humble eclectics are better problem solvers than humble purists.

The author's style is well-suited to his audience, and makes for interesting reading. Boxes of various types and sizes frequent the chapters, and many kinds of material frequent the boxes. Encased are rules of thumb (a sum of money growing at a compound rate of  $X$  per cent will double in  $72/X$  years), definitions (sustainable agriculture is a system that remains profitable for a long time at present prices and technologies), focal issues (for national forest policy) and interesting facts (recycled paper already accounts for 22 per cent of Australian paper production). Warnings, exhortations, admissions, and important ideas, as well as headings, are in bold type. For example, extensive dryland salinity will demonstrate to the world that we are a nation of fools who do not learn. If foot and mouth disease breaks out tomorrow, our response will be comparable to the success of the Gallipoli campaign. Sometimes it's hard to tell if we're being warned, encouraged or scolded, but the points are well made.

There is much commonsense in this book. For example, changes in resource will come about inch by inch and not in miraculous leaps and significant changes cannot occur in ten or even twenty years, but must slowly evolve.

This is a good book, a good read, and at \$29.95 it is good value for money. It deserves to be required reading in all courses of resource management at all levels. It has achieved the author's goal, and provides just the right mix of ideas to encourage us to think twice and keep thinking.

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*An Agricultural Policy for the UK.* By M.P. BURTON. (Avebury: Ashgate Publishing Company, Aldershot, 1992.) Pp. x + 315, ISBN 1 85628 295 3.

Avebury markets itself as an international publisher of research monographs of considerable intrinsic value but limited, albeit international, appeal. This particular monograph reports the detailed structure of an agricultural policy model for the United Kingdom. It will hold the interest of most agricultural economists with a quantitative bent but, as the title would suggest, will be of most interest to agricultural policy-makers in the UK.

The book contains six core chapters, each containing a reasonably well demarcated set of equations. They describe:

- land allocation and crop production
- the production of livestock and livestock products input demand and expenditure
- the determination of meat, fruit and vegetable producer prices
- the determination of cereal, compound feed and milk prices
- the decomposition of net product and the determination of farm income.

This general structure has been largely dictated by the objective of providing a forecasting and policy simulation model compatible with the Output, Input and Farm Income table published in the UK *Annual Review of Agriculture*. Beyond this, the particular structure and form of each equation has been largely guided by the experience of previous analysts rather than the implications of any economic theory. A disadvantage of this approach is that the degree of arbitrary specification search is uncertain and may leave the book open to charges of data mining.

In all there are a total of 279 endogenous variables (and thus 279 equations) and 81 exogenous variables. Of the 81 exogenous variables, 19 are dummy variables, 14 are weather series, 15 are policy variables which may be viewed as being under the direct control of agricultural policy-makers, and the remainder are economic time series viewed as exogenous to the UK 'National Farm'. Each of the 279 equations is estimated using ordinary least squares, which econometricians might view as a shortcoming — there is scope for improving the efficiency of the estimates using systems methods.

The statistical properties of each estimated equation are examined in isolation, then dynamic simulation is used to evaluate the equations as an integrated whole. The simulations provide information on the structure and properties of the model (e.g. stability and multipliers) — these could be determined analytically but, for a model of this size, are more easily identified through simulation. The simulations also provide information on the adequacy of the model as a policy model — information is obtained on the linkages between policy changes and target variables, thereby providing an indication of whether the model will be useful for policy purposes. In all these areas the model seems quite satisfactory, although the inclusion of only 15 policy variables means that its long-term usefulness for policy analysis may be somewhat limited.

The book does not represent any new advances in economic or econometric methodology. It employs the conventional *ad hoc* methodology which agricultural economists invariably use when attempting to balance theoretical consistency with statistical significance and policy relevance. The value of the book is that it appears to have achieved this balance despite numerous constraints imposed by data availability and computational resources.

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*Protecting Markets: U.S. Policy and the World Grain Trade.* By RONALD T. LIBBY. (Cornell University Press, Ithaca and London.) Pp. xvii + 152, ISBN 0 8014 2617 0.

Is the primary aim of the US Export Enhancement Program (EEP) to increase the US share of the international wheat market or to bring the intransigent European Community to the negotiating table? While American rhetoric, from both the Reagan and Bush administrations, would suggest the latter, Australian farmers could be excused for concluding from actual US wheat export subsidies that the former objective takes precedence. This view is supported by the mid-1992 expansion of EEP to include markets that had not previously been targeted and in which there were little or no EC sales.

EEP is the subject of this timely analysis, in which Libby argues that American trade policy is essentially mercantilist, rather than free trade in orientation as frequently espoused. The idea behind EEP is that the United States can use the program to apply political pressure to the EC budget by subsidising the export of US wheat, lowering world prices and forcing the European Community to increase its own export subsidies. According to Libby, budgetary constraints would force reform of the EC Common Agricultural Policy, or at least force the Community to take a more conciliatory role in the Uruguay Round of multilateral trade negotiations.

Libby argues that EEP has contributed to the reform of the Common Agricultural Policy, illustrating that a mercantilist trade strategy is an

effective policy. Of importance are not so much the financial costs of subsidising exports, but the increasing political tension between the members of the European Community.

Despite Libby's conclusions, the impact of EEP is much debated. Certainly political tension has been observed in the Community, although the role of EEP is not self evident. It is difficult to show that EEP has reduced EC production or exportable surpluses. Critics of the policy maintain that the European Community has 'deep pockets' and can easily afford the 1 to 2 per cent increase in budgetary expenditure entailed in agricultural subsidies. Furthermore, as the United States exports a higher proportion of its production, maintaining a competitive subsidy war is akin to shooting oneself in the foot. A recent study by Anania, Bohman and Carter (1992) put the government cost of additional wheat exports at US\$469 per tonne, three times the price received by US producers. In addition, as stocks have been run down at great expense, restraints on production have been lifted. The amount of land taken out of production in the United States under the Area Reduction Program has been reduced to zero for 1993.

Libby's economic analysis of EEP is somewhat lacking, although this book is not alone in this regard. The economic impacts of targeted subsidies depend primarily on the responsiveness of demand to changes in prices in targeted and non-targeted markets, and the extent to which markets can be segmented. Wheat is not a totally homogeneous product, with differences in protein content and uses between hard and soft varieties. These physical characteristics partially segment the various markets. For greatest effect, EEP should be targeted at those markets in which consumption is most responsive to a fall in price. Such factors are important in assessing the impact of EEP and the objectives underlying the policy. The United States has targeted some markets in a manner that has little effect on the European Community. Libby's view that the major objective of EEP is to influence EC policies would be more persuasive if he had taken better account of some of these factors.

Game theory, the analysis of conflict, receives barely a mention in this book. The burgeoning literature on endogenising government policy, which attempts to bring together economics and political science, is also neglected. Nonetheless, the book is topical, lucid, informative and well presented. At a time when US-Australian trade relations are at a low ebb, this work will provide stimulating reading for agricultural, trade and foreign policy analysts.

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Anania, G., Bohman, M. and Carter, C (1992) 'United States export subsidies in wheat: strategic trade policy or expensive beggar-thy-neighbour tactic', *American Journal of Agricultural Economics* 74: 534-45.

This review was initially written for the *Australian Journal of Political Science*, but is reproduced here because of wider interest in the US Export Enhancement Program. (Book Review Editor)

*Planned Change in Farming Systems: Progress in On-Farm Research.* By ROBERT TRIPP (ed.). (John Wiley and Sons, Chichester, 1991.) Pp. x + 348, ISBN 0 471 934178.

Farming systems research (FSR) is an approach to the development and adaptation of improved technologies that has been advocated as particularly relevant to agriculture in less developed countries. Over the past 15 years or so, the approach has been vigorously promoted by a range of international agricultural research centres, donor agencies and (chiefly developed country) academics. These days, most LDC national agricultural research services have had at least some experience of FSR.

As explained in the book, FSR is variously interpreted, but a common and essential component in most applications is on-farm research (OFR), wherein prospective technologies are tested in farmers' fields. OFR is often seen as the pivotal element of FSR, providing the means of validating on-station research and also giving feedback to research managers about needed research directions to tackle the real problems faced by farmers. As the subtitle indicates, it is the OFR component of FSR that is the particular focus of this book.

Perhaps it is a consequence of the inherent difficulty of solving the problems of poverty in LDCs that fashions in development thinking come and go. In any event, as followers of the recent literature will know, much of the early enthusiasm for FSR has now waned to the point where some critics are suggesting that the approach has 'failed'. Certainly, some of the early claims for FSR were exaggerated, and operational problems have abounded. However, it may be much too early to sign the death certificate for an approach that has such a solid, common sense foundation. The criticisms of FSR may be no more than a part of the proper reassessment of its true value. Perhaps now the negative features are being overstated by some academics afflicted by the 'publish or perish' syndrome, just as the advantages were overstated previously. Certainly, few of the critics of FSR and, indeed, few of its promoters, have advanced much empirical evidence in support of their views. It is in this context that this book is so welcome.

The main part of the book is a collection of nine case studies of work in the FSR mould that all embodied OFR components. The cases chosen were distinguished by the fact that, for each of them, the degree of success was assessed and reported, success being judged by the extent to which the improved methods were adopted by the target groups. The cases are too diverse to allow any coherent review to be offered here.

The nine case-study chapters are preceded by two introductory chapters by Robert Tripp, the editor of the whole volume. The first is an excellent overview of the FSR movement and of OFR methods. It should be read by everyone interested in these topics. The second is a good overview of the nine case studies of OFR.

The third and final part of the book comprises five chapters dealing with the future directions of OFR. These chapters have been contributed by different authors and the quality is rather mixed. Together, however, they make interesting reading.

The first chapter in Part 3 is a review of the limitations of OFR by Tripp. He reaches the sobering conclusions that:

For OFR to be effective, it needs to be well connected with extension; to operate where input availability is assured; to direct good-quality agronomic and socioeconomic research at a wide range of issues that may arise; to enlist farmers' participation in the research process; and to be well integrated with the rest of the research system. (p. 254)

and

. . . OFR must be carefully targeted. It must be directed towards problems that promise technically feasible solutions and for which a critical mass of research resources is available. And it must be aimed at groups of farmers who represent those sectors of the rural poor that can realistically benefit from technical change in agriculture. (p. 254)

Moreover:

The demands for developing better information about farmers' conditions, and using that information to direct a research program that includes a strong OFR capacity, are considerable. Meeting these demands is particularly daunting for national research systems in developing countries. (p.255)

Similarly, in a discussion of the integration of OFR into national research systems, Merrill-Sands, Biggs, Bingen, Ewell, McAllister and Poats conclude:

Many national research systems have launched major OFR efforts aimed at generating relevant technologies for resource poor farmers. Institutional and policy factors, however, have often hindered the effectiveness of these efforts. Experience has shown that OFR ... poses special organisational and managerial challenges. Institutional innovations and a strong policy commitment are needed if OFR is to succeed . . . Sound research methods, alone, are not enough. (p. 311)

Finally, in examining the integration of OFR with disciplinary and commodity research, Byerlee, Hobbs and Tripp conclude that:

. . . further progress demands better integration between disciplines, commodities and institutions, as well as integration between strategic research, adaptive research and extension. Without this integration there is little possibility of effectively addressing the issues identified in the OFR program or of exploiting the potential for using OFR to set research priorities and guide policy decisions at the national level. (p. 334)

In all these circumstances, it is amazing that any success stories at all could be found to report in the case-study section of the book!

Surely the various prognoses indicated above are too pessimistic. For centuries farmers have been evolving and adopting better farming methods with little or no help from professional scientists and extension personnel. All that needs to be asked of FSR and OFR is that the process is speeded up enough to justify the costs involved. The reality is that all the conditions for success set out in the book will seldom if ever be met, as the case studies in fact indicate. Yet something can often be achieved, again as the case studies show.

In discussing OFR impact in Southern Africa, Low, Waddington and Shumba describe the merits of what they rather curiously call 'sub-optimal' recommendations that take account of farmers being unable to manage all factors of production at optimal levels, because of resource constraints or conflicts. How strange that apparently none of the contributors to this volume recognised the analogy with research management in LDCs. Had they done so, the book might have concluded with the following paraphrase of a sentence by Low *et al.*: recommendations are not concerned with 'the best way' to implement OFR, but with reducing research management conflicts or improving research management practices or resource use within the given constraints. (p. 265)

In other words, optimal management of OFR may not be attainable, but the method may still yield benefits to farmers and societies. The case studies give some clues, but unfortunately the final section of the book is too idealistic, so that realistic paths to the future for resource constrained national research services, with all their inherent limitations, are not well mapped out.

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*Greening a Brown Land: the Australian Search for Sustainable Land Use.* By NEIL BARR AND JOHN CARY (Macmillan Education Australia, South Melbourne, 1992.) Pp. 343 + viii, ISBN 0 7329 1423 X.

In recent years conservation groups, with the assistance of the media, have presented land degradation as the most serious problem in Australian agriculture, and as being largely due to rapacious farmers attempting to enrich themselves with little consideration for the land they farm. The authors of *Greening a Brown Land* attempt to take a dispassionate view and examine how the problem arose, its importance and the methods of overcoming it.

This is approached by examining the effect of different systems of farming on the physical and social environment of much of Victoria

and parts of New South Wales and Tasmania since European settlement commenced in the 1830s. They point out that, contrary to popular opinion, much of the land occupied by the first squatters was virtually treeless: probably because of the use of hunting fires by the aborigines. This assertion is based on journals and drawings of explorers and early squatters. To some extent the authors' claims are supported by the recent maps of Australian vegetation in 1780 constructed by botanists.

The sheep, and later the rabbits introduced by the squatters, changed the grasslands from pastures dominated by deep-rooted perennial species to pastures with a preponderance of annual species. During the last 50 years a high proportion of the latter have been replaced by the much more productive annual legumes, such as subterranean clover, where soil fertility is maintained by topdressing with superphosphate and trace elements, and by the nitrogen fixed by these legumes. Such pastures are capable of carrying at least twice the number of livestock that could be grazed on the original grasslands.

The opening of the land to selectors and the introduction of wheat growing in the 1860s involved a far larger drain on soil fertility than did grazing, and forty years after wheat growing commenced yields had declined to half of those obtained in the 1860s. This problem was overcome by sowing the wheat with superphosphate and using bare fallowing to make nitrogen readily available to the crop. The introduction of this technology led to an increase in Victorian wheat yields.

However, fallowing left the soil exposed to the elements for a long period of the year, and by 1930 soil erosion was a serious problem in the wheat lands. It was only overcome in the late 1940s when fallowing was replaced by clover ley farming in which wheat was sown after a period of leguminous pasture which enriched the soil with nitrogen, increased soil organic matter, improved soil structure and reduced the period of fallow, thus reducing the danger of erosion. More recently attempts have been made to maintain soil structure by replacing cultivation with herbicides. Legume pastures have tended to increase soil acidity in both wheat and grazing lands. In addition changes in vegetation have led to dry land salinity in some areas. The seriousness and extent of these problems are unknown and economic methods of controlling them have yet to be developed.

The introduction of irrigation in the Murray Valley at immense cost to the taxpayers in the 1880s is regarded as the most serious cause of soil degradation. The productivity of some irrigated land was destroyed by high water tables and salinity. These problems can only be overcome by a large investment in drainage works which would probably have to be provided by the taxpayer.

From this historical survey the authors conclude that the cure for one form of degradation sometimes leads to another which in turn is overcome by further technical developments. The overall effect is an increase in soil fertility as the volume of agricultural production has more than doubled in the last 40 years. The attitude of farmers to new

innovations is carefully examined. Not surprisingly it was found that farmers would only introduce techniques from which a satisfactory economic return could be obtained.

The authors are suspicious of simplistic prescriptions such as mass tree planting to overcome dry land salinity. It is demonstrated that some of the salinity has risen in areas which were clear of trees when the Europeans arrived and that planting trees will only give the desired result if they are established in the right place which is extremely difficult to determine.

It is pointed out that in the past, simplistic solutions such as bare fallowing and irrigation either led to further problems or disaster. The authors call instead for a measured discussion and reject emotional overstatement as an acceptable tool in the environmental debate. 'We should not fall for the doomsday debating trick of reducing a continuum of possible policies to two extremes, and then showing the one extreme to be so unappealing that the alternative is seized on with grateful relief.'

A book of this type is badly needed in Australia to provide a sound basis for discussions of the degree of land degradation and what should and can be done about it. It is well written and presented in such a way that the ordinary reader with little scientific or economic training can grasp the essentials of the problem and the limitations and advantages of the solutions which are available.

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*Issues in the Pricing and Management of Natural Resources 1991.* (Economic Planning and Advisory Council, Background Paper No. 16, AGPS, Canberra.) Pp. 159, ISBN 0-644-14780-6.

Not released until March 1992, this is a collection of papers presented at an EPAC seminar in Canberra. It is not to be confused with the smaller volume on *Managing Australia's Natural Resources*, EPAC Council Paper No. 49, or with the ABARE's *Natural Resource Management: An Economic Perspective*, both published in 1992.

Backgrounds of the contributors to *Issues* include environmental economics, scientific research, government research agencies, State government administration, and industry. The volume commences with three short overview papers, followed by two in-depth reviews of natural resource policy. The first is a thought-provoking paper by Young, based on his forthcoming book on *Sustainable Investment and Resource Use*, on the role of government in resource management. Marginal opportunity costing principles are examined, and the user-pays and beneficiary-compensates principles are discussed. Young notes that low resource prices favour development of resource-consuming rather than labour-intensive technologies, and suggests that state and federal governments be required to finance more of their activities from resource rent taxes. Grey and Marlow, as consultants,

then attempt to marry economics and conservation. They discuss the political economy of natural resources, and suggest partitioning of revenue from asset sales from other revenue. They are critical of the concept of an "optimal depletion rate", and argue that natural capital has no substitutes, leading to a strong ecological definition of sustainability.

Four excellent papers deal with specific resources, viz. water, native forests, fisheries and mining. The most entertaining is that of John Paterson, who argues that few public utilities or transport systems in Australia operate at anywhere near technical efficiency. A decade ago, before microeconomic reform became fashionable, he was placed in charge of the Hunter District Water Board, which was grossly over-staffed and had followed a policy of "deferred maintenance". By introducing marginal cost pricing, he incurred the wrath of the water union, the public and the media, but survived to achieve a more equitable pricing system, 35% reduction in water use, and postponement of new investment and debt.

Rose and Bhati note inefficiencies in pricing of timber from Australian native forests, and the flow-on effects of low prices to private log suppliers. They observe that royalty levels have recently been increased in most states, and that various inquiries are contributing to the formulation of a National Forest Strategy. Gentle examines issues of resource and industry management in off-shore fisheries, based on the recent Industry Commission report on *Cost Recovery for Managing Fisheries*. Particular problems are noted for managing a mobile resource, where stocks are difficult to monitor, and information costs are high. The industry suffers from overcapacity, dissipation of rents and dominance of short-term goals. Individual transferable quotas (ITQs) allow the industry freely to choose the most efficient means of harvesting the total allowable catch (TAC). Gentle concludes that major restructuring is still to be done, greater collective action of fishers is needed, and the task of rationalisation is likely to fall to government for some time.

O'Hara discusses mineral royalties from a state and territory viewpoint, based on the *Royalty Discussion Paper* produced by the Australian and New Zealand Minerals and Energy Council. An excellent overview of the pros and cons of alternative royalty systems and problems of introducing 'efficient' profit-based royalties is provided. A hybrid system of *ad valorem* and rent-based charges — currently operating in Tasmania — is suggested.

Two further discussion papers are included. Moran of the Tasman Institute advocates free trade and secure property rights for natural resources. Muir from CRA presents a number of controversial views: resource rents may be too high; mining companies pay more tax and have lower risk-adjusted rates of return than firms in other industries; natural resources have little value until discovered so rents should be attributed to management and risk taking rather than access to resour-

ces. The volume concludes with results of a short survey of participants' attitudes to resource pricing and environmental management.

This is a highly readable and informative book. Individually, the papers are relatively short, and algebra is avoided. Pricing of agricultural land, air, oil and gas, and recreation areas is not covered. The depth of economic theory is limited. However, a significant contribution is made to understanding of the complexities of pricing for resource rent and cost recovery. The relationship between natural resource prices and economic efficiency, equity and sustainability is well illustrated. As well, a wealth of practical information and insights is provided, making this an excellent reference source for both practitioners and students of natural resource management.

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