

Book reviews

Land Tenure and Natural Resource Management: A Comparative Study of Agrarian Communities in Asia and Africa, edited by Keijiro Otsuka and Frank Place. Published by Johns Hopkins University Press, Baltimore, Maryland, USA, 2001, pp. xxiii + 380, ISBN 0 8018 6746 0 (hbk), 0 8018 6747 9 (pbk), \$US69 (hbk), \$US38 (pbk).

This is an ambitious book that should be of interest to economists as well as sociologists interested in development, agro-forestry, and institutions. Population growth in areas of low agricultural productivity has led to increasing poverty and deforestation as farmers have sought to expand cultivated areas. The authors of the chapters in this edited volume aim to identify the fundamental causes of deforestation and land degradation in marginal, hilly areas of Asia and Africa. Property rights have been identified as a key factor in sustainable management of natural resources. The authors examine the evolution of property rights institutions, their consequences for natural resource management, and their efficiency and equity effects using quantitative survey data. The book thus contributes to the growing empirical literature on institutional analysis.

The book is based on a research project undertaken by the International Food Policy Research Institute that commenced in 1993. The theoretical basis of the study is the induced innovation model developed by Hayami and Ruttan (1985), as well as Boserup's (1965) work on the evolution of farming systems. Study sites were located in marginal, mountainous areas where tree resources are important. In order to develop generalised conclusions, they worked in seven countries: Ghana, Indonesia (Sumatra), Malawi, Uganda, Vietnam, Nepal, and Japan. At each site they gathered information on the major issues affecting natural resource management, developed testable hypotheses, and conducted two surveys. An extensive survey was used to examine how property rights institutions changed over time, the determinants of those changes and the impact of alternative institutions on natural resource management. An intensive survey looked at natural resource management and profitability at the household level.

The first two chapters of the book present the objectives of the study, the issues involved with property rights and deforestation, a brief discussion of property rights regimes, and the theoretical framework and methodologies used. The two chapters seem to have been written separately and would have benefited from reorganisation. For example, the factors affecting property

rights institutions are discussed in the middle of Chapter 1, but a useful graphic related to that discussion occurs at the beginning of Chapter 2. Also, related models are presented in both chapters. Chapters 3–9 present the results of research projects in specific study sites in Asia and Africa. Each chapter follows a similar format which is useful for the reader. The detailed information on property rights institutions and their evolution over time is very interesting and will enable readers to think more broadly about property rights in their own situation. However, at times the authors neglect to explain uncommon terms. For example, finishing the chapter on Ghana left me no wiser about the definition of ‘uterine matrilineal inheritance’. Chapter 10 summarises and integrates the research findings and the implications for natural resource policy in a non-technical way. I plan to use this chapter as a reading in my classes, although the policy implications could have been further developed.

My major criticism of the book is that although it fundamentally concerns institutions and institutional change, the broader institutional literature seems to have been overlooked. For example, a 1996 book, *Empirical Studies in Institutional Change* edited by Alston, Eggertsson, and North would have been very useful in the development of the theoretical framework and interpretation of the results. While this book appeared after the beginning of the project, previous work by those authors would have been relevant. In addition, they do not delve deeply into the fundamental institutional issues. For example, they could have examined, in a rigorous way, the dimensions along which alternative land tenure institutions differ and how these relate to farming systems. Also, it seems that in many of the countries they cover, as well as in the USA and Australia, clearing forest leads to more secure property rights. Why is this such a widespread institutional pattern? Has it outlived its usefulness? Furthermore, they do not evaluate the effect of colonialism on existing institutions. For example, in Ghana, farmers do not own valuable timber trees, so they cut the young ones down to prevent loggers coming in later and destroying their cocoa crop. Planting of cocoa trees is a particularly effective way of increasing security of land tenure. Are these two institutions traditional, or are they a colonial legacy? The answer has implications for their evolution.

The editors indicate at the outset that the book does not examine externality or public good issues such as biodiversity. Many of the authors have a specific interest in agro-forestry and do not seem to value native forest. Nevertheless, deforestation is a major concern worldwide because of its contributions towards global warming and biodiversity loss. Institutions that promote agro-forestry may well have a negative effect on biodiversity, and this needs to be explicitly recognised. For example, in Ghana, property rights were gained by clearing native forest and further strengthened by planting cocoa. Although farmers in Vietnam receive 50 year leases on land they have reforested, reforestation subsidies target only a limited number of tree species.

The research upon which this book is based was a very ambitious undertaking, because of the complexity of land tenure institutions as well as the difficulty in obtaining the data required for statistical hypothesis testing. However, the use of proxies and simplifying assumptions to facilitate statistical analysis makes one wonder whether the resulting models really capture the important issues. In the chapter on Vietnam, for instance, the decrease in the rate of deforestation is attributed to changes in policy. An alternative explanation is that the best land for agriculture was already cleared, so that what remained was remote or there was nothing left to clear (deforestation in one province had already reached 84 per cent). Another fundamental issue arising in testing the effects of institutional change is the time lags involved. It takes time for laws to be fully implemented and for those laws to have an effect on natural resource management. Another noticeable oversight is the lack of discussion of the effect of discount rates on deforestation and investment in tree crops. Observed discount rates in developing countries, especially among the poor, are notoriously high.

This book represents a valuable contribution to the literature on property rights and natural resource management. While it focuses on areas of high population density in the developing world, it would also be useful for the Australian context where there is an emphasis on designing policies and institutions to prevent loss of native forest and biodiversity, and promote planting of trees to reduce dryland salinity.

References

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Environmental Policies for Agricultural Pollution Control, edited by J.S. Shortle and D. Abler. Published by CAB International, Wallingford, UK, 2001, pp. x + 224, ISBN 0 85199 399 0, £45 (hbk).

Although agriculture is a major cause of water pollution there is now considerable support from environmental groups, government agencies and farmers themselves, for policies to resolve this problem. However, there is

little agreement on appropriate policies and even less agreement on policies for non-point source pollution – and that is the rationale for this book. The authors set out to develop an understanding of instruments that can be used to control non-point source pollution, to set out the economic and social issues involved in the choice of instrument, and assess the advantages of each instrument.

Shortle *et al.* in Chapter 1, entitled ‘Agriculture and Water Quality: The Issues’, review the characteristics of different pollution problems (nutrient pollution, pesticides, sedimentation, mineral damage and pathogen damage) and then pose five fundamental questions for policy-makers: How should responsibility for pollution reduction be allocated between agriculture and other sectors? How should responsibility for reduction be allocated between farms in a watershed? What types of policy instruments should be used? Do other government policies conflict or complement policies for agricultural water quality? and At what levels of government should actions take place? These characteristics of the problems, and the fundamental questions for their resolution, form the basis of the book.

In Chapter 2; ‘Environmental Instruments for Agriculture’, Horan and Shortle firstly examine the choice of enforceable policy instruments to induce farmers to change practices to reduce pollution. They then raise the fundamental questions again. Who to target? What measure of performance to target? What stimulus will encourage change? The chapter goes on to examine the issues in designing different enforceable instruments to reduce agricultural non-point pollution. There is a useful tabular review of 34 empirical studies of agricultural pollution that identifies the physical and economic models used and the policy features examined.

Since the 1970s, economists have been exploring policy instruments to manage agricultural and other non-point pollution problems and have promoted a catalogue of theoretically-appealing instruments. But the instruments that bring about a first-best solution are generally too complex, too costly, or too information intensive. There is consequently a growing amount of literature on instruments that can be more readily applied in the real world and this material is reviewed. Solutions require watershed-wide approaches that coordinate point and non-point controls, and that account for multiple sources and transaction costs.

In Chapter 3, Horan *et al.* examine four types of voluntary instruments that indirectly affect water quality. These are education; research and development; green payments; and compliance measures. Although these instruments do not require, nor do they directly induce, the necessary changes in farmer behaviour, they have been at the forefront of government efforts so far. Education’s greatest value may be as a component of a pollution control policy that relies on other tools. Research and development

cannot stand on its own either, primarily because off-farm costs of pollution do not show up on the farmers' bottom line. Green payments are based on actions taken to reduce non-point source pollution. Programs of payments can be designed in many ways, with different income and environmental objectives, different degrees of cost-effectiveness, and different trade-offs between consumers, producers, taxpayers and the environment. Instead of offering payments, compliance would withhold payments of existing farm benefits unless a change is made. The effectiveness of these kinds of policies is of course limited by the extent to which those receiving existing benefits contribute to water quality problems.

In Chapter 4, 'Estimating Benefits and Costs of Pollution Control Policies', Ribaudo and Shortle review the main methods used to value unpriced benefits and costs of pollution. The strength of this material is its use of algebraic models to describe the bases of valuation in each method, rather than the width or depth of the review. However, it digresses from the flow of ideas, and so could have been omitted.

Chapter 5, 'Non-point Source Pollution Control Policy in the USA' by Ribaudo examines the water quality problems that drive policy change, provides an overview of the policy framework and then reviews specific policies to control non-point pollution from agriculture – all in the context of the USA.

Hanley reviews the situation in the European Union (EU) in Chapter 6. EU directives define the nature of the required policy change and sometimes set targets that must be met. Member states must devise policies to move toward the targets. The most important directives are the Drinking Water Directive (to establish maximum permissible concentrations of pollutants), the Nitrates Directive (to reduce nitrate pollution), and the Agri-Environmental Regulation (to protect wildlife and landscape). Historically within the UK, most policies have attempted to reduce impacts on wildlife and landscapes. These impacts have been widespread and noticeable, whereas impacts on water quality have been localised and less noticeable. Policies in the UK follow that nation's standard approach of payments and voluntary participation.

All EU countries intervene to protect the environment but to various degrees. The three main policies are environmental taxes such as the Danish pesticide tax or the Dutch manure levy, voluntary sign-up programs, and regulations such as stocking or spreading limits. Voluntary sign-up schemes dominate where farmers are producing environmental 'goods'. Environmental taxes and regulations dominate where farmers produce environmental 'bads'.

Abler and Shortle review the relationship between trade liberalisation, the environment and pollution, in Chapter 7. Their theoretical framework

analyses the problem in terms of scale, output mix, input mix, externality, policy and technology.

The authors have comprehensively reviewed and summarised the many lessons to be learned from the literature, from experience, and from research into these issues. Non-point source pollution is hard to regulate and control because it involves many dispersed sources, each emitting small amounts of pollution in a stochastic manner. An effective policy must influence many actors to reduce small amounts of pollution that cannot be observed. Unfortunately, the authors had to conclude that no general statement is possible on which policies give the most efficient or cost-effective control: 'An approach based on state and locally developed watershed level control plans that allow a variety of policy tools to be used, including both carrots and sticks, probably provides the greatest opportunities for cost-effective control' (p. 149). While this conclusion may not be a new or a large reward for reading this closely-spaced, closely-argued, highly-referenced text, it may be accurate and realistic. As such, the authors have produced a most effective review of the state-of-the art in this field.

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Resource Management in Asia Pacific Developing Countries, edited by Ross Garnaut. Published by Asia Pacific Press, Canberra, 2002, pp. xv + 259, ISBN 0 7315 3682 7, \$32 (pbk).

According to Sandy Cuthbertson's preface for this book, in June 2001 the colleagues, friends and family of Professor Ron Duncan gathered at a seminar to honour him. The papers in this book flowing from that seminar deal with some aspects of the subject matter tackled by Ron in his varied and productive career. In his introduction, editor Ross Garnaut explains that the unifying theme of these papers is the application of the new institutional economics to natural resources management issues that are important for economic development in the Asia Pacific region. Despite this unifying theme, the papers in this book are very variable in subject matter, orientation, length and, in some cases, quality.

This book contains several explanations of new institutional economics. For the uninitiated, the following is adapted from Chapter 9 by Petersen. New institutionalism grew from the realisation among social scientists that institutions – defined as humanly-devised constraints that structure political, economic and social interactions – significantly shape human behaviour. New institutional economics deals with institutional structures

that govern economic behaviour. There is strong emphasis on market transaction costs.

In the first chapter by Anderson *et al.* the focus is on institutions relating to commodity and risk markets. They describe and discuss past policy efforts directed at stabilisation goals for internationally traded commodities, and show how new institutional economics has led to increased emphasis on managing risks through markets and market-based instruments. However, there remain some incomplete or missing markets for agricultural risks, and these authors take an appropriately sceptical look at the scope for selective intervention in such cases.

In Chapter 2, Gilbert discusses the implications of the inherent unpredictability of commodity prices for attempts to stabilise prices. Writing about the price forecasting efforts in the 1980s when he worked in the Commodities Division of the World Bank, headed by Ron Duncan at the time, he states with commendable frankness that the forecasts generated were 'extraordinarily inaccurate'. In discussing marketing boards and the like, particularly in many African countries, Gilbert argues that, with a few exceptions these schemes did little more than absorb resources through rent extraction and retard the response to secular declines in prices. The same must surely be true about price stabilisation schemes and related subsidies in western Europe and northern America, even today. Is there some selective blindness here?

In relation to the shift to more emphasis on risk management rather than risk reduction through stabilisation efforts, Gilbert argues that the costs of price variability to farmers are often exaggerated. He concludes that, in the context of developing country farmers, commodity risk management schemes will be relatively unimportant except as a means to develop and extend rural credit. I am inclined to think that this is too pessimistic a view of the future scope for risk sharing as both the range of products and innovative ways of 'retailing' them to farmers continue to evolve.

In the short Chapter 3, Rod Duncan writes about conflicts over mineral rights in Southeast Asia. His thesis is that the unequal distribution of mineral wealth in a country means that there is pressure for provinces with minerals to secede if too little of the royalties come their way. National governments may need to face the reality that political stability may require them to allow mineral-rich regions to retain a large share of the benefits of their wealth.

In Chapter 10, Temu discusses the related issue of landowners' rights in mining in Papua New Guinea. This is a case where the property rights of the owners are not necessarily clearly defined, yet they are able to exercise their rights through actual or threatened disruption of mining operations. Temu argues that effective arrangements have evolved whereby landowners agree not to disrupt operations in return for a share of the income. Yet these

arrangements must surely be less efficient in terms of transaction costs than if property rights were more clearly defined.

In Chapter 4, Edwards and Hone provide a thought-provoking two-way classification of natural resources into private-good resources and public-good resources, and into internationally traded resources and non-traded resources. They argue that market approaches to natural resource management involve efforts to shift resources between categories. The authors illustrate the implications of their argument in relation to soil resources, biodiversity and greenhouse gases. They conclude that there are limits to the capacity of market-based instruments to deliver efficiency gains to society. As a result, Edwards and Hone suggest that either common property or state ownership is often likely to result in better management of these resources.

Chand deals in Chapter 5 with the sustainability aspects of natural resources management in the Pacific Islands. Resource extraction, by its very nature, is not sustainable so at issue is how the resource rents from extraction are used. If income flows are to be sustainable, a proportion of the rents needs to be invested wisely to provide income when the original resource is gone. Chand argues that not all Pacific island nations have established the policies, procedures and incentives to make that happen. While the paper does include some helpful suggestions for policy-makers, it is less clear how problems evident in a number of countries can be overcome or avoided in future.

Chapter 6 by Warr is in a different mould from the other chapters in the book. He deals with the relationship between agricultural productivity improvement and the incidence of poverty in Thailand. While there is not much in this paper that fits into the new institutional economics framework, the conclusions are fascinating. Poverty incidence in Thailand declined substantially over the period studied and agriculture was the only sector that contributed to this reduction. However, the reason was not that increased agricultural productivity had a stronger impact on poverty than growth in other sectors; it was simply that agriculture was the only main sector of the economy where there was significant productivity growth. Unfortunately therefore, we are left wondering about whether it is true that the best way to tackle poverty in countries like Thailand is by giving priority to the development of agriculture.

Musgrave's contribution in Chapter 7 relates to public good and common property issues impinging on water management in Australia – presumably regarded as a developing country to fit under the title of the book. The management of water needs to account for the fact that decisions have to be made at various levels from the river basin down to the individual user. The new institutional view suggests a model that allows for the simultaneous existence of multiple regimes of property rights and associated institutions,

organised in an institutional hierarchy. Following this is a need to consider the levels in that hierarchy at which allocation decisions can best be made to minimise transaction costs. Musgrave plays with this important notion in an interesting way, finding that there is a need for more consideration of the issue and experience with other similar systems before firm conclusions can be reached.

In Chapter 8, Byron examines the Chinese experience with forest and grassland management, drawing some critical conclusions about the merits of the strategies followed. He sees the greatest problems stemming from the reluctance to move away from central control of policy-making to allow significant liberalisation, not only of markets but also of governance.

Chapter 9 by Petersen is about institutional structures of fisheries management in the South Pacific. This paper is more explicitly set in the framework of the new institutional economics than any other in the book. That makes it the most interesting and instructive contribution, at least to a reader with only a nodding acquaintance with these ideas. Petersen uses this framework to consider institutional choices to minimise transaction costs for fisheries management. She contrasts the results of these considerations with the current institutional structure of the South Pacific tuna fishery, leading to some practical recommendations about needed institutional reforms.

Overall, this book was a 'good read', despite some aspect of the curate's egg almost inevitably present in any edited collection. I was, however, led to reflect on the merits of producing such a book to honour an esteemed colleague's work. No doubt Ron Duncan feels proud that the editor and contributors made the effort to produce a book in his honour. He might have felt even more pleased if the quality of all the papers had been more uniformly up to his own high standard – which might have required a somewhat different basis for the selection of authors. But, of course, Ron's reputation is founded not on this rather cheaply produced book, but on his own substantial contribution over the years.

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Social Assessment in Natural Resource Management Institutions, edited by A.P. Dale, C.N. Taylor and M.B. Lane. Published by CSIRO Publishing, Melbourne, 2001, pp. xiv + 296, ISBN 0 643 06558, \$70 (pbk).

This edited volume is about the development of social impact assessment as a component of decision-making for natural resource use and management. Social assessment is the process of collecting and organising information

about the impact of proposals on groups, communities and social structures. This book is concerned with ways in, and degrees to which, social assessment has become normalised within and accepted by the organisations and institutions associated with natural resource use – this is termed the ‘institutionalisation’ of social assessment.

It is to the credit of the editors, Allan Dale, Nick Taylor and Marcus Lane, that they have had the insight to create this work. A prerequisite for this must be a deep understanding of the subject matter and the social and political forces at play in public decision-making, and familiarity with the work of many practitioners across a wide range of disciplines. Over 30 international experts from fields as wide as urban and social planning, environmental planning and policy, social psychology, indigenous studies, community development and natural resources management, have been brought together to explore the meaning, role, practice and procedure of social assessment. The various authors present a fascinating analysis of efforts in Western countries to bring the process of social assessment into public and private decision-making.

By now, we would think that a better understanding of social impacts associated with policy interventions and better information on the distributional effects of change, would be central to public decision-making. We would also think that, by now, sophisticated tools and methods would be available to analyse these effects and bring social impacts into our planning processes. Not so! The report card shows social assessment has not been given the weighting it should in economic, environmental and social planning and investment.

Analysis in this book shows that the process of social impact assessment has often been under-resourced and poorly guided both conceptually and, in many circumstances, by inadequate analysis. Politicisation and limited public participation have often circumscribed the process and, because for any proposal, stakeholders with present or expected property rights and power have the potential to lose, it may in some circumstances, not have been in the interests of these stakeholders to reveal the results of social assessment. As a consequence, the process has often simply justified a proposed course of action.

Far from dwelling on past failures, however, this book leaves one with a feeling of optimism about the role of social assessment in contributing to and guiding democratic decision-making. Analysis of the many successful ventures into social assessment lays the groundwork for new ways of thinking about assessing social impacts and making the process work. The analyses, therefore, provide a point of departure for renewed efforts to engage in and institutionalise social assessment.

This book is structured from the global to the local, but with an intentional focus on Australian and New Zealand experience. Thus, the international

setting (Part 2) deals with analyses of the treatment of social assessment in a research context, social assessment in large organisations like the World Bank, and the consideration of social issues in selected countries. In the national context (Part 3) authors document the chequered history of social assessment in Australia and New Zealand, highlighting the many conceptual challenges and dilemmas. Governments in these countries and their associated agencies could have done more to institutionalise social assessment. Invariably it seems civil society, rather than bureaucracies, have demanded attention to the social and economic impacts of policy changes. Experiences within Australia at the provincial (State) and local levels are outlined in Parts 4 and 5 respectively, through analysis of different models of assessment and attempts to normalise assessment within agencies. Part 6 explores experiences in particular sectors such as New Zealand's tourism and natural resource management areas, Australia's Forest Agreement processes and social assessment for indigenous communities.

Social assessment is indeed a *process* which, by definition, relies on longevity and authority, possibly via legislation as with environmental impact assessment. It requires an holistic, systems-based approach which captures the complex nature of the issues and gives expression to the differing roles and pluralistic interests of stakeholders and the politics of change. This, the various authors conclude, is still a major challenge in public decision-making.

We are the richer for the analysis presented in this book. It will quickly find its place in advanced courses in natural resources management, social planning and urban and regional development. Students will find a wealth of case study material as well as a sound conceptual rationale for undertaking social assessment as an integral part of public investment and decision-making. For practitioners in the range of disciplines involved in public policy, this book provides a benchmark for our efforts to date and insight into the political and procedural innovations we will need to implement in order to improve our performance in this area. I commend this book as worthy of serious reading – it will have a long shelf life.

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