

## Book reviews

*Valuing the Environment in Developing Countries*, edited by David Pearce, Corin Pearce, and Charles Palmer. Published by Edward Elgar, Cheltenham, UK, and Northampton, MA, USA, 2002, pp. xii + 585, ISBN 1 84064 148 7 (hdbk), A\$277.74.

This book brings together a collection of 19 case studies by authors, principally but not exclusively connected with the Centre for Social and Economic Research on the Global Environment (CSERGE) at University College, London. The contributions span a wide variety of environmental valuations in more than 13 countries. Environmental amenities valued included air and water quality, various species of wildlife, forests, wetlands and parks, as well as a number of management options.

The majority of studies in the first two parts of the book report the findings of Contingent Valuation Method (CVM) assessments. The only exceptions are Chapter 2 where Maddison and Gaarder use a benefit-transfer approach; Day in Chapter 9 applies the Travel Cost Method (using nested multinomial logit models), and Barnes in Chapter 10 uses a more general economic analysis. The studies in the third part focus more on financial and economic analysis, using data estimates from a range of sources. Adger *et al.* (Chapter 13) apply a mix of methods; Sullivan (Chapter 15) applies an income accounting method and Mourato and Smith in Chapter 14 are the only authors to use CVM in a willingness-to-accept format.

The CVM studies are presented in a range of styles. Some, such as those authored or co-authored by Mourato, provide thorough details of the CVM results that would be valuable for someone wishing to develop a survey in a related context. Other studies provide very little information about the CVM survey, and devote more attention to background details or the policy implication of the study (e.g., Tiwari in Chapter 6).

Some of the studies provide useful and creative ideas about conducting CVM valuations. In Chapter 4, Mourato explains the use of a payment ladder (p. 70) where respondents tick values they are 'almost certainly willing to pay' and then cross out values they are 'not willing to pay'. Both Swanson *et al.* (Chapter 7) and Kontoleon *et al.* (Chapter 8), conduct the CVM survey in a group setting where background information is presented in both a visual and oral format. The sessions are intermixed with periods of information provision and periods where respondents complete part of the survey. This appears to be a good system to maintain respondent interest, but one that may induce some compliance bias.

Overall, the CVM studies are very useful, but there was no assessment of the lessons learned. One obvious problem of surveying communities with

very low incomes is the appropriate use of a payment vehicle. Only Waughray *et al.* in Chapter 5 mention that where larger sums of money were involved, bags of maize were used as a proxy for cash (p. 119).

This book is an excellent resource for new practitioners of the CVM in developing countries. However, some people who are inexperienced in the application of the CVM or other stated preference techniques might not realise how complex the surveys can be. Creating a hypothetical market that is realistic and believable, and collecting reliable responses, is not a simple matter. It would have been useful if some of the authors could have provided some feedback on components that worked well, and on some of the difficulties they encountered. It is almost as if conducting a CVM survey in a developing country is no different than conducting one in a more developed country. Certainly Whittington (2002) does not agree. In his opinion, there are three main reasons why so many of the CVM studies conducted in developing countries are so bad:

1. CVM surveys are often poorly administered and executed, and in particular may suffer from problems with enumerator bias.
2. CVM scenarios are often poorly crafted.
3. Few surveys are designed to test whether some of the key assumptions that the researcher made are the right ones (hence the need to use split-sample experiments (p. 335)).

Whittington (2002 p. 325) states that the single largest hurdle to achievement of a high-quality CVM survey is framing the scenario and because this is so important, it needs to be reported as does the elicitation method. Although some of the authors report these details, many do not. This is not to suggest that the studies in this volume are among the bad ones (the case studies are of a very high standard). However, in addition to the valuation details, it would have been useful to have been provided with some lessons about administering CVM in developing countries to supplement the information provided in Whittington (1998).

Appropriately, there is no discussion of theoretical issues of CVM valuations in this volume, but I found it interesting that two of the studies reported the use of very high discount rates. In Chapter 16, Yaron used a rate of 35 per cent as typical of the personal discount rate of individual farmers in Cameroon (p. 415). Pearce *et al.* (Chapter 17) also discuss several studies illustrating the existence of high personal discount rates. A recent paper by Windle and Rolfe (2004) suggests that very high personal discount rates (30–37%) might also be realistic in Australia in the context of valuation studies.

The studies in the third part of the book provide an excellent reference for anyone interested in the assessment of forest values. A very broad range of values is considered, and both direct, indirect, and non-use values are assessed. In addition to good resource material on the direct assessment of

values, detailed references to other literature also are provided. An example of the former is Chapter 15, where Sullivan outlines her methodology in a detailed and comprehensive way that could be replicated easily by somebody not so familiar with the techniques. In Chapter 13, Adger *et al.* assess a variety of values as well as provide references to a very broad range of material. One of the most comprehensive overviews of forest values is provided by Pearce *et al.* in Chapter 17. They also present an overview of the published work on the financial profitability of sustainable timber management, sustainable forest management, and conventional logging (Table 17.2, pp. 461–462). In the same chapter the authors include a summary of other similar studies, both in this volume and from elsewhere, which helps draw together some of the studies in this section.

In terms of indirect benefits and non-use values, some good material is presented on the potential for pharmaceutical benefits; ecosystem services such as watershed protection (flood and erosion mitigation), and most important of all, carbon sequestration/storage. In general, the relative merits of forest management systems rest heavily on nonmarket values, of which carbon values clearly dominate (Pearce *et al.* p. 485).

The book is a huge resource, but one aspect that disappointed me was the limited contribution from the editors. The introduction is only a brief four pages and there is no concluding chapter. The introduction outlines four common themes (p. 3):

- Economic valuation based on people's preferences is perfectly feasible in the developing world
- Environmental assets are important (does this really need stating?)
- Nonmarket benefits can be especially important to low income groups
- Fourth, but only implied in most case studies, the amount that local communities are willing to pay for environmental conservation may be a small fraction of global willingness to pay

The first theme does suggest that eliciting people's preferences in the developing world might not be so easy, and as I suggest above it would have been useful to draw out some of the lessons learned in the case studies.

However, this should not deter any potential reader. The book is a unique resource for a wide-ranging audience, including academics, students, and anyone in the field who might be required to make an assessment of environmental values. As the *Lonely Planet* guides have become the Bible for travelers, this will be the Bible for environmental economists in developing countries. And for those in industrialised countries? There is a second volume to come that will deal with the developed world.

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- Whittington, D. (2002). Improving the performance of contingent valuation studies in developing countries. *Environmental and Resource Economics* 22, 323–367.
- Windle, J. and Rolfe, J. (2004). Assessing values for estuary protection using different payment mechanisms in the Choice Modelling technique. Paper presented at the Australian Agricultural and Resource Economics Society 48th Annual Conference, 11–13 February 2004, Melbourne.

*Managing Conflict in Facility Siting*, edited by S. Hayden Lesbirel and Daigee Shaw. Published by Edward Elgar, Cheltenham, UK, 2005, pp. xii + 220, ISBN 184376 523 3 (hdbk), £59.95.

Anthropogenic activities often require the establishment of facilities that inflict, or have the potential to inflict, costs on host communities. All else being equal, these communities tend to be reluctant to accept these costs. It is thus unsurprising that there is often intense local opposition to the construction of airports, nuclear reactors, garbage dumps, chemical storage facilities, and the like. This reluctance is appropriately characterised as the ‘not in my backyard’ (NIMBY) syndrome. Nonetheless, society clearly has a need for the services and products that mandate the establishment of NIMBY-type facilities. As populations increase and economies continue to develop, the number of major facilities will need to increase. It follows that there is a growing need to find solutions to problems of opposition to facility siting.

*Managing Conflict in Facility Siting* offers a small but nonetheless important step in understanding the major issues surrounding the siting of (locally) unwanted facilities. Many of the chapters in this book were presented at the inaugural *Workshop on Challenges and Issues in Facility Siting*, held in 1999, and as such may be somewhat dated. Although the book will be of interest to academics, graduate students, and practitioners, it mainly serves as an introduction and overview to the issues involved. It is identified in Chapter 1 that potential host communities are typically hostile to the fact that they incur the majority of potential costs of a NIMBY facility, whereas benefits accrue to a larger group. Where locals hold property rights, a process must be devised to persuade them to accept these facilities. The challenge (and indeed focus of the book) is to develop an approach that minimises the transaction costs associated with securing agreement.

Chapters 2 and 3 provide reviews of some of the approaches that have been used to date and make some general prescriptions with regard to the optimal siting process. Broadly speaking, it is argued that a history of more authoritarian approaches for locating NIMBY facilities have given way to those that involve greater community involvement and compensation. This reflects increasing community distrust in the ability and willingness of governments, bureaucrats, and other experts to act as faithful agents for communities and society as a whole. In Chapter 2, Kasperson argues that a market-based

approach, which incorporates negotiation by all interested parties over compensation, safety standards, and other features of a project, has some potential as a way forward. Both Chapters 2 and 3 detail some important elements for future success in facility siting. They include: (i) better establishment of the need for facilities; (ii) allowance for equitable solutions; (iii) informed discussion of the risks involved; (iv) defining the role of public consultation; (v) establishing trust; and (vi) providing adequate compensation. Importantly, as local communities and projects are far from homogenous, a significant degree of institutional flexibility is warranted.

If a NIMBY project is associated with risks for the host community, it seems reasonable to conclude that provided compensation commensurate with these risks is offered, agreement could be reached. Interestingly, evidence suggests that this has not been the case. Indeed, it is argued that greater compensation may actually lower the degree of acceptance. This issue of compensation is examined more closely in Chapters 4 and 5.

In Chapter 4, Jenkins-Smith and Kunreuther present empirical results derived from a telephone survey performed in the USA during 1992–1993. Their analysis points to several relationships between acceptance/rejection of siting proposals and compensation. They conclude that compensation will be more effective when offered early in the process, when safety standards are implemented, and where compensation directly addresses potential damage.

In Chapter 5, a model is derived that incorporates social pressure. It is argued that individuals do not wish to deviate from the views held by the majority of citizens. Thus, if others are opposed to a NIMBY facility, social pressure may induce an individual to reject a proposal even if they would otherwise support it. Using this basic assumption, the authors derive a model that predicts that where social pressure opposing a project is sufficiently large, increasing compensation may have no effect on overall support. Empirical evidence is also presented that firstly supports the key assumption that individual decisions are made contingent on community attitudes. Moreover, it is argued that widespread public opposition creates a 'veil of silence' in which supportive individuals are reluctant to enter into the debate. This chapter raises a particularly interesting issue that warrants further investigation. One issue may be the impact of social pressure where the ultimate decision is determined by a referendum. Voting can be done anonymously and thus final decisions can be made without fear of reprisal. However, the 'veil of silence' effect could still influence outcomes through the suppression of information. Another issue that receives insufficient attention is the influence compensation has on (uncertain) perceptions relating to potential damage.

In Chapters 6–9, some detailed case studies are presented that highlight the problematic nexus between theoretical 'first best' solutions to the siting problem and actual implementation. The relative success of the Japanese government in persuading citizens to host nuclear facilities is discussed in

Chapter 6. This includes a discussion of its use of different approaches such as public education, the provision of information, and payment of compensation – in particular to key groups that hold veto rights in the process.

Siting of a waste management facility in Germany is used in Chapter 7 to identify some of the issues involved in gaining meaningful community participation. A major conclusion of the authors is the need to establish *a priori* the topics of discussion, the scope of influence the participation process is likely to have over the final policy outcome, and a realistic timetable for negotiations.

Chapter 8 involves consideration of the case of France's efforts to site nuclear waste in deep underground storage. The specific focus is on the role of special commissions that were established to act as providers of information, and as a conduit for political debate. This attempt at informing the debate and installing trust in the process, it is argued, has met with only limited success.

The interaction between lobby groups is clearly an important issue in the siting process. An Australian example of just how important this can be is presented in Chapter 9. It considers the possible relocation of the Coode Island chemical storage facility following an industrial fire in 1991. Of interest here is that a group representing local interests at Coode Island was effectively crowded out by a more powerful coalition of interests with broader environmental concerns. In raising environmental issues that were not pertinent in the existing site, these groups were successful in raising the associated political costs associated with a relocation. It is argued that this occurred despite the environmental case against a move of the facility being weak and the status quo being associated with greater risks in terms of the proximity of residents to the facility.

The final chapter of this book involves arguments that existing solutions to the siting issue are inherently doomed due to agency failure and rent seeking. The author suggests a more radical approach incorporating the notion of a functional, overlapping and competing jurisdiction (FOCD). In this approach, a separate FOCD would be established over the catchment of any individual facility. Thus, the potential for full inclusion of all those affected, adversely and positively, is allowed for. Perhaps more problematic is the suggestion that political influence be allocated via a 'one dollar, one vote' mechanism. Although this is potentially efficient in the sense that preferences are accurately conveyed, it raises serious equity issues and is unlikely to be adopted in most democracies.

The issue of how to resolve conflict in the siting of NIMBY facilities is likely to increase in importance in the coming years. Overall, the authors contributing to *Managing Conflict in Facility Siting* provide an overview of the issues involved in the NIMBY phenomenon, and some interesting perspectives by way of various case studies, although the link between these real-world examples and the general theory discussed earlier in the book is not as well established as it could be. Readers wishing for a more technical discussion, in particular the various mechanisms by which to allocate

compensation, may prefer to consult Quah and Tan (2002), which provides a more formal treatment. Nonetheless, this publication will be of interest to both the uninitiated reader and those more familiar with siting issues, although those in the latter group may be disappointed with the lack of new material. Perhaps a nontrivial contribution of this book will be to instruct and generate future research interest in this important and interesting issue. As such, it has potential to be a useful addition to professional libraries.

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### Reference

Quah, E. and Tan, K.C. (2002). *Siting Environmentally Unwanted Facilities: Risks, Trade-offs and Choices*. Edward Elgar, Cheltenham, UK.

*Agricultural Trade Reform & the Doha Development Agenda*, edited by Kym Anderson and Will Martin. A co-publication by Palgrave Macmillan and the World Bank, Washington D.C., USA, 2006, pp. 444, ISBN 08213 6239 9 (pbk), US\$35.00.

Judged by its expanding membership, the World Trade Organization (WTO) seems to be a successful institution, yet it is a victim of its own success. Its stated aims are to reduce impediments to trade, yet it is apparent that many of its new members, mainly developing countries, are reluctant to reduce their own barriers. The reasons given are several: (i) the costs of structural adjustment are significant, at least in political if not in economic terms; (ii) the scope for being flooded with cheap imports, particularly from China; (iii) the loss in tariff revenue; and (iv) the potential erosion of preferential access to developed country markets. Furthermore, many developing country WTO members feel that promises made during the Uruguay Round were not delivered, and they are owed something before they would be willing to open up their markets. The current round focuses on development, and proponents of liberalisation, such as the World Bank (who published this volume with the usual disclaimers), need to address these concerns.

This volume is an edited collection of articles examining the potential gains from liberalisation, the erosion of preferences, special and differential treatment for developing countries, alternative tariff cutting formulas, tariff rate quotas, export subsidies, domestic support, and cotton subsidies. In addition, there are two chapters on Doha reform scenarios. The editors, in an overview chapter, conclude that the potential gains from further liberalisation are huge, developing countries would gain disproportionately, poverty would be reduced and agriculture is still important in spite of its limited contribution to global output. However,

there is very little on adjustment costs and almost nothing on tariff revenues. A chapter addresses preference erosion specifically, and concludes that it is a serious problem for a small number of countries, not only particularly those producing sugar and bananas (e.g., Fiji), but also textiles and clothing (Bangladesh).

Given the lack of progress in the ongoing WTO negotiations, is there a need for yet another book on the agricultural negotiations? Indeed, the World Bank itself has co-published several volumes on the topic within the past 2 years. The major justification appears to be the release of the 2001 Global Trade Analysis Project (GTAP) database. This is an advance of the previous version (1997) in that it incorporates nonreciprocal tariff preferences (such as Everything But Arms), the *ad valorem* equivalents of specific tariffs, a different method of handling in- and out-of-quota tariffs, and other refinements that have the effect of reducing the average tariffs. For example, tariffs on merchandise trade are reduced from 6.0 to 3.2 per cent in the European Union, 9.2–5.2 per cent in Japan, and 2.9–1.8 per cent in the USA. Lower initial tariffs reduce the gains available from further liberalisation. A sizeable part of the book is devoted to modelling several likely scenarios. The results are generally consistent with previous modelling and the same policy implications hold. Some of these implications are not consistent with the thinking of negotiators, and this is where the modelling can contribute to moving the negotiations forward.

The modelling chapters are worth further discussion, even in a short review. Hertel and Keeney present a GTAP modelling exercise that estimates the potential welfare gains from various agricultural and trade policy reforms. They estimate the potential gains from total agricultural liberalisation to be \$56 billion (in 2001 US\$). Improved market access contributes \$44 billion to the total gains, whereas the elimination of export subsidies (\$1 billion) and domestic support (\$2.8 billion) does very little. This result questions the push by developing countries in the WTO for the removal of export subsidies and domestic support. Developing countries take this view because they themselves have few subsidies to remove. However, eliminating export subsidies may harm many developing countries because they themselves tend to be importers of temperate products. They would do better pushing for improved market access, which delivers \$12 billion in welfare gains. Only \$1.8 billion comes from liberalisation within developing countries themselves, largely from the promotion of South–South trade.

The final chapter, by Anderson, Martin, and van den Mensbrugge, describes several alternative reform scenarios using the World Bank's Linkage model. This model uses the same GTAP 6 database used by Hertel and Keeney. The authors maintain that under the likely Doha reform scenarios as outlined in the July Framework Agreement, little real liberalisation will occur because of the gap between the bound tariff rates that are the subject of negotiation and the applied tariff rates. When allowances are made for self-designated exemptions for special and sensitive products, welfare impacts are negligible. With more ambitious scenarios, there are several interesting results:



1. The potential gains are eroded quickly with exemptions. Global gains from agricultural liberalisation would be reduced from \$75 billion to \$13 billion if developed and developing countries were allowed to, respectively, exempt just 5 and 10 per cent of their tariff lines from the specified cuts. As a result, developing countries would lose as a group.
2. Proportional cuts generate similar gains as a tiered formula, implying the complexity of the former approach may not be justified, especially if a cap is used to introduce some progressivity into the tariff cuts. As a result, developing countries would increase their welfare by using a simple capped formula to make substantial reductions in applied tariffs.

Will this analysis convince the sceptics? The World Bank maintains liberalisation will benefit Sub-Saharan Africa, in spite of the fact that these countries tend to be food importers, benefit from EU export subsidies, may lose preferential access and are unlikely to be required to make real cuts in applied tariffs themselves. Critics will maintain the Bank has ignored the difficulties poor countries have in shifting labour and capital from one sector to another, in meeting the standards required to compete in international markets, and in merely transporting commodities to functioning ports. Moreover, the analysis is model based, and such modelling will always show that welfare is maximised by liberalising completely with minimal delay.

Supporters of liberalisation might claim the modelling substantially underestimates the gains by ignoring dynamic gains resulting from increased investment and technology transfer. Furthermore, the method of calculating tariffs underestimates the true level of protection.

In spite of these criticisms, this is a well-written and timely publication, accessible to non-economists, but with enough data to be of value to academics and policy makers. At US\$35 for 400 pages, this volume will replace previous books on agricultural trade reform.

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*Global Agricultural Policy Reform and Trade: Gains and Losses*, edited by Joseph Cooper. Published by Edward Elgar, Cheltenham, UK, and Northampton, MA, USA, 2005, pp. xvii + 202, ISBN 1 84376 887 9 (hdbk), £55.00.

Some opponents of the World Trade Organization's recent attempts to liberalise agricultural trade have argued that the current policy direction fails to adequately address the likely adverse environmental consequences of freer trade. For example, it has been suggested that even in some advanced countries where agriculture contributes to less than 2 per cent of GDP, agriculture nevertheless

is a major user of land and water resources and trade liberalisation may exacerbate those problems. This book, edited by Joseph Cooper of the US Department of Agriculture's Economic Research Service (USDA-ERS), makes a contribution to the current policy debate on agricultural trade liberalisation. The authors attempt to provide an overview of the environmental implications of agricultural trade liberalisation in the USA and abroad. Not only do changes in trade policy affect the environment, but also environmental policy may affect trade. Therefore, a second objective is to examine the impact of domestic agri-environmental policies on trade.

The book is presented in three parts. The environmental impacts of trade liberalisation are assessed in Part I, the effects of agri-environmental policies on agricultural trade are addressed in Part II, whereas the final part involves an examination of the implications of the findings for research and policy. The first chapter of Part I uses a spatial equilibrium model of the USA to estimate some environmental impacts of agricultural trade liberalisation on US agricultural areas. In general, it is shown that US agricultural production marginally increases with trade liberalisation. The authors conclude that the environmental impacts would be small at less than 1 per cent with respect to the baseline, but with some potentially important regional variations. The second chapter involves an examination of the global environmental effects of world agricultural trade liberalisation. The results generated are based on the ERS's Future Agricultural Resources Model (FARM). The main conclusions are that trade liberalisation can have both positive and negative environmental effects worldwide. In the USA, the model predicts there is a slight decrease in forestland and other land. However, in the EU, there are relatively large reductions predicted in the use of water, labour, capital, and cropland. For the rest of the world, there are small increases predicted in the use of water, labour, capital, cropland, and pasture land.

Part II also comprises two chapters that address some of the possible environmental and economic impacts of agri-environmental policy instruments. The first chapter in this section uses a regional model of the USA to examine the effects of alternative environmental policies on agricultural trade. For example, three alternative policies for achieving a 10 per cent reduction in soil erosion are considered. These are: (i) an agri-environmental payment scheme in which farmers are compensated for their opportunity cost of reducing environmental tillage on highly erodible land (HEL); (ii) a regulation requiring adoption of conservation on a specified share of HEL; and (iii) a land retirement policy focused on HEL. The results indicate that the regulatory pricing policy is the most efficient (i.e., entails the least cost) of the three policies. The second chapter analyses the consequences of potential agri-environmental payment programs in the USA and concludes that they would present minimal disruption to trade. Part III concludes with two chapters. The first addresses major issues pertaining to Multilateral Environmental Agreements. These include the economic conditions required for Multilateral Environmental Agreements to be successful. Multilateral Environmental Agreements involves

two or more countries entering into a mutually beneficial, nonbinding agreement to remediate environmental impacts, or conserve and/or enhance desirable environmental goods and services (e.g., biodiversity). The last chapter provides a summary of the main findings.

Overall, this is a well-written book that would be useful to trade policy analysts, decision makers, and researchers. However, I do have a few quibbles about the book. This is really a book about the impact of agricultural trade liberalisation on the USA. The modelling of the impacts on the rest of the world cannot be very meaningful given the level of aggregation used. If you are a modeller, you are likely to be frustrated about the scant information given on the modelling details and some of the key parameter assumptions made. Although some references are given, material could have been provided in the Appendix. It appears that a lot of effort and space have been devoted to empirical modelling and not much has been left over for a full discussion of the policy implications. For example, not much advice is offered as to how countries could minimise the potential adverse environmental impacts of agricultural trade liberalisation. The book will probably not make the best seller list, but it remains one of the few attempts to tackle the critical issue of the impacts of free trade on the environment.

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