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## Book reviews

### **Against the Grain: Agri-Environmental Reform in the United States and the European Union**

Clive Potter, Wallingford, Oxon, UK and CAB International, New York, April 1998, 208 pp., US\$ 65.00 hardcover, ISBN 0851992285

Potter describes and compares the process of agricultural policy reform within US and Europe over the past three decades. The book describes the environmental consequences of policy and political processes, and reflects on what environmental achievements have been gained. In doing so, Potter's study reveals just how difficult it is to effectively target, monitor and evaluate environmental policies. In the case of early US soil conservation measures, the allocation of subsidies reflected farmer up-take rather than the soil erosion threat. Perhaps more significantly, subsidies for soil conservation were never sufficient to outweigh the commercial incentive for farmers "to put highly erodible land under highly erosive crops" (Potter, 1998, p. 40). Subsequent policy developments have been more clearly focused on conservation outcomes, and separated from farming. They show that policy objectives need to be clearly targeted in accord with the objectives that they are intended to achieve.

Chapter 1 gives an overview of the development of productionist agricultural policies and practices since World War II, and their damaging environmental consequences, and the gradual build-up of pressures for reform. Chapter 2 describes the pressures for reform in more detail. Chapter 3 looks at the reform process in the US leading up to and beyond the enactment of the Farm Security Act Conservation Title in 1985. Potter notes that "the retargeting of the Conservation Reserve Program from a narrow focus on highly erodible land in the early sign-ups to a broader embrace of 'environmentally sensitive lands' in the later ones,

illustrates the way the policy adapted to changing public priorities" (p. 81).

Chapters 4 and 5 look at reforms in UK and their modification and adoption by the wider European community. A program in the UK which promises to grow in importance in the future is the Countryside Stewardship Scheme, which offers farmers a menu of management options varied according to location and landscape type. Farmers are encouraged to make a selection from the menu and put together their own proposals for managing any land to be put into the scheme. According to Potter, current views among conservation groups in England are that the Countryside Stewardship Scheme provided better value for money than its major alternative, the Environmentally Sensitive Areas scheme.

Chapter 6 analyses the implication of the GATT/World Trade Organisation talks, and the pressures and prospects for agri-environmental strategies. It assesses how far the scaling down of price supports and 'decoupling' of public subsidies from production is likely to benefit the environment. It compares the US and European arguments for retaining some form of government support to agriculture on environmental grounds.

Chapter 7 reflects on the achievements gained by the reforms of the 1980s and 1990s, and suggests why agri-environmental policy is likely to remain a feature of the rural policy scene. It notes the arguments of both critics and supporters of the schemes, and concludes that:

- There is a need for development of environmental performance standards and indicators to identify and set targets for environmental subsidies.
- There is a need to develop better accountability measures (administrative and monitoring procedures) to ensure that public funds toward

agri-environmental aims are achieving what they are intended to achieve.

- There is a need to search for policy measures that will encourage member states with less developed environmental concerns to implement the latest agri-environmental Regulation in the fashion for which the Regulation is intended.
- There is a need to develop policy measures that will encourage a shift in farmer attitudes toward conservation as much as a shift in behaviour.

This is an extremely rewarding book if the reader is determined enough to keep going. It provides a very thorough overview of agricultural and agri-environmental policies and their environmental effects in Europe and the US. In doing so, it reveals some of the consequences for policy of the different philosophies and values that underlie the different approaches. While Americans separate 'wilderness' from 'countryside' and have viewed the environmental consequences of agriculture largely from the viewpoint of its physical and biological effects (on soil erosion and water quality), the Europeans make no such clear distinctions. Their concern with countryside and environmental protection encompasses both biological and social consequences of agricultural practice. These different valuations of countryside have resulted in different environmental incentives and a different policy development process. But both the American and European policy approaches have experienced similar difficulties in implementing their environmental protection methods. While the difficulties have been reduced over time, as suggested by Potter, much remains to be done to ensure that policies achieve their intended environmental effects.

The bibliography, with more than 400 references, is a useful directory to key sources of information. These sources extend till 1997, and include government documents such as reports to the US Congress, reports of the UK Ministry of Agriculture, Fisheries and Food, and agricultural publications of the European Union.

Several features make this a difficult book to read. The aims of the book are not clearly and succinctly stated and there is no clear statement of conclusions. The overall structure of the book is repetitive, rambling, and unclear. The key points of each chapter are difficult to identify. This reviewer frequently wondered: what is this section trying to say? What are the main points of this chapter? Is anything different be-

ing said in this chapter from that said in earlier pages? Over 80 acronyms are used, including such obscure examples as Universal Soil Loss Equation (USLE), Nitrogen Advisory Area (NAA), Nitrogen Sensitive Area (NSA) and Netherlands Scientific Council for Government Policy (NSCGP). The necessity of turning to the list of abbreviations to identify these acronyms slows down a reading of the book and considerably adds to the effort of understanding what the author is trying to say.

It is not clear who is the intended readership. If the intended readers are policy makers, then the writing style is likely to deter all but the most dedicated. If the intended readership is academic, then many of the people who could benefit from a reading of the book (because of its detailed assessment of the practical environmental effects of policy) are likely to miss it.

Overall, the book provided valuable insights into a number of different policy issues concerning environmental protection within agricultural landscapes. Despite the effort involved, it was a worthwhile read.

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### **Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience**

Fikret Berkes, Carl Folke, Johan Colding (Eds.), Cambridge University Press, Cambridge, 1998, 459 pp, +xvi, US\$ 80.00, ISBN 0-521-59140-6

A number of disciplines concerned with systems analysis from ecology (Hollings, 1986) to computer programming (Kelley, 1985) have focused much attention and debate on the nature of complex systems, supporting the idea that some degree of flexibility is required to absorb shocks and thus allow for more sus-

tainable and resilient systems. It is hypothesised that systems that regularly absorb relatively small shocks are much less prone to very large shocks which might threaten the functioning of an entire eco-system. An example is given by forest fire suppression in the case of Yellowstone National Park where, after a century of successful fire control, almost half of the park burnt in one major fire (Hollings, 1986). Alternatively, as a number of the authors in this book maintain, in certain circumstances, it may be the case that only crisis itself can induce changes in the system so that a new, hopefully more sustainable, system may arise.

The chapters in the book present convincing evidence that the question of natural resource management should be considered from the perspective of how to manage shocks and variability in the natural resource system while concomitantly allowing for sustainable use. However, sustainability as defined in the first chapter of the book (Chapter 1, p. 4), does not capture the idea that human beings value stability for its own sake. Throughout the book, while it is sometimes recognized that humans try to avoid fluctuations through various risk coping and risk management mechanisms, there is no explicit formulation of how risk-aversion will affect a proposed management system based on shock absorption and flexible management tools.

Berkes and Folke (Chapter 1, p. 11) citing Hollings (1986) write that "... the resource management institution, devoted to production efficiency, has become more rigid and less responsive to environmental feedback, thus setting the stage for a resource management crises." The fact is that most users of natural resources will not only be concerned with 'production efficiency', but also with reducing the variability of net returns. Some institutions that appear rigid and that do not allow for flexible responses may in fact arise from the desire of resource users for more stable flows of benefits and/or more stable rules regarding use of those resources, *even if these lead to lower profitability* and even when this type of management is ultimately doomed to induce even larger shocks than those that were to be avoided originally. Even though coping strategies are explicitly linked to the functioning of adaptive and sustainable livelihood strategies in a paragraph in the final chapter (Chapter 16, pp. 425–426), throughout the book, there is an overwhelming emphasis on "management systems that flow with nature"

(Chapter 16, p. 430), with little mention of how this might be undertaken when users are risk-averse and where risk-coping mechanisms are scarce.

The book is organized in four parts, plus the introductory chapter. An analytical framework is outlined in Chapter 1 which posits that four sets of elements all with feedback interactions between them are important in understanding which interactions are most important for sustainable outcomes. These are: (1) ecosystem characteristics; (2) people and technology; (3) local knowledge and (4) property rights institutions. Chapters 2–4 present case studies highlighting the lessons to be learned from existing locally diverse systems, with examples from India, Iceland and Sweden. The following four chapters examine the emergence of resource management adaptations with four case studies from Canada, Brazil, Nigeria and the US. This is followed by four chapters documenting successes and failures in regional systems, drawing on case studies from Mexico, the Sahelian region of Africa, the Himalayas, and the northeastern US. Forestry, grazing, fishing and hunting are all represented in the case studies, and as can be noted by the list of countries/regions studied, there is wide geographical coverage. In general, the case studies attempt to follow the analytical framework outlined in the first chapter, with varying degrees of success. There is general agreement that the following characteristics are associated with successful management: (1) ease of monitoring indicators that provide valuable feedback information; (2) adaptive management structures that are flexible enough to change in response to continual learning and (3) integration of indigenous knowledge with formal scientific knowledge (see Chapters 3, 6, 12, 14 and 15, in particular).

On the other hand, a thorough reading of the case studies leads to an 'inverted-U' hypothesis about many variables associated with common-pool resource management: (1) groups should be small — to decrease transactions and communications costs and because small is generally associated with homogeneous (Chapters 2, 4, 8, 9, 11), but groups cannot be too small or they would not be able to cover the costs of cooperation (Chapter 8), which in itself seems to imply that costs are either fixed or are not an increasing function of the number of members; (2) prices, or relative profitability, should be high enough to make collective action profitable (Chapters 6, 7, 8), but

not too high so as to induce over-exploitation of the resource (Chapters 2, 5, 11); (3) systems should be relatively isolated, so as to reduce outside pressure on traditional authorities and to enable the community to effectively exclude 'outsiders' (Chapters 4, 8, 9, 11), but not too isolated because this may mean very thin markets and thus that profitability may be too low to cover costs of cooperation (Chapter 8), because (regulated) contact with the outside may introduce valuable new technologies and/or practices (Chapter 7), and because exposure to (but not domination by) outside cultures increases cultural capital and promotes flexible institutions (Chapter 6) and finally (4) strong social cohesion either through kinship-based and close community ties or belief in supernatural forces is essential for promoting and enforcing collective action and group cooperation in the management of resources (Chapters 4, 5, 7, 9); but too much reliance on community ties or the supernatural may lead to the collapse of effective mechanisms for controlling resource use when these are challenged and where the explicit link between the social norm and sustainable practices is not clear (Chapter 2), or may promote cultural and institutional inertia in the face of fluctuating circumstances (Chapter 6).

The case studies, then, share a particular fault with many other case studies on common-pool resource management; to wit, because it does not appear as if the study sites were drawn from a representative sample of communities where all relevant data has been collected, both the quantitative and qualitative effects of many key variables on sustainable resource management are indeterminate. If the effect of a change in a certain variable is ambiguous in general, then it becomes critically important to characterize the situations under which a change is likely to be positive or negative, large or small. Such a characterization would help make the case study analyses more internally consistent and allow for greater comparison across case studies.

In summary, the conceptual and analytical framework incorporates some of the few new ideas in community-based natural resource management systems to be introduced in a long while; namely the need for feedback mechanisms to be incorporated into adaptive management of natural resource systems, and the value of integrating both formal scientific and indigenous knowledge in the functioning

of these complex systems. A few of the case study chapters introduce interesting ways to apply and/or expand on the conceptual framework for studying certain situations, particularly the chapter by Alcorn and Toledo on the management of community forest lands in Mexico, who use the concept of 'shells' from computer science and apply it to tenurial institutions; and, the chapter by Acheson et al. who introduce the concept of parametric modelling and contrast the results with those obtained from standard numerical modelling of chaotic fisheries. While the authors basically accept the eight design principles of Elinor Ostrom (1990), they add on an additional dimension that the logic of the underlying ecological system must be taken into account when monitoring use and devising and enforcing use-rules. The case studies, while interesting, do not quite rise to the task laid out for them in the initial chapter. Also, there are far too many case studies of successes, especially in the developing countries with respect to non-commercial natural resources, and far too few examples of failures, especially among communities in the same region, so that comparison is often difficult, if not impossible.

While adding on the ecological dimension is certainly important, there is a clear lack of acknowledgement of the role of risk aversion, as well as the potential trade-offs or complementarities between economic growth and natural resource management. For example, a number of the case studies claim that a low level of technology is 'good' for the environment and management of resources (see Chapters 2, 4, 8), and leads to sustainable and resilient systems. One must still recognize that there may be sizeable economic tradeoffs, and that many systems (both ecological and social) may be sustainable and resilient, but with very low mean, and highly variable, incomes for the people who live in these systems. In the case of Maine clam diggers or Canadian Amerindians, the state welfare apparatus and outside income sources can offset the low per capita profitability and variability of the particular natural resource base. However, in many developing country situations, this may not be possible and very real trade-offs may in fact exist. All in all, however, the book presents a new and interesting framework for further integrating social, economic and ecological systems, under which the more difficult questions regarding both tradeoffs and comple-

mentarities might be examined, by using information collected from purposively chosen case study sites.

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