

## Book Reviews

### PRIVATIZATION AS CONSERVATION POLICY

*Privatization as a Conservation Policy: A Market Solution to the Mass Extinction Crisis.*  
Joseph Henry Vogel. CIRCIT, Melbourne, Australia, 1992. 170 pp. ISBN 0-646-12315-7.

There is much to like in this refreshingly written romp around the biodiversity issue. The author sets out to make the case for increased privatisation of genetic resources as the most effective and efficient method to achieve their conservation. He brings in a host of interesting ideas ranging from genetically and culturally coded functions to “genesteading”, to creation of the “gargantuan database” to keep track of gene ownership, to non-equilibrium thermodynamics. Yet the text remains entertaining and accessible to a broad audience. I would recommend the book to anyone interested in the biodiversity issue, not because it has anything fundamentally new to say, but because it brings many disparate threads together in a novel and thought provoking way.

There are many things in the book with which I agree and a smaller number with which I disagree. That said, I’ll concentrate on the things I disagree with since it makes for better copy and leads to a more concise review.

First off, “privatisation” is, I think, much too narrow a concept. Vogel needs to talk about the extension of property rights more generally. Privatisation implies “private”, individual property, ignoring the many forms of community property rights systems that are perhaps more prevalent in the cultures that would be playing a large role in “holding” genetic resources, and therefore more relevant (cf. Berkes, 1989; Ostrom, 1990; Bromley, 1991). His discussion also ties rights to genetic resources directly to land ownership, which is the most obvious but not necessarily the only or the best approach. Rights to genetic resources (and a host of other natural resources) can be decoupled from land ownership and assigned separately, much like mineral rights are now (Young, 1992). The recent agreement between a large pharmaceutical company and Costa Rica for genetic resource use is a relevant example.

Second, privatization is presented as an independent and comprehensive approach. In fact, it can only exist in combination with adequate government or community intervention (to set up and protect the rights system) and can only work when (as Vogel himself points out) transaction and enforcement costs are less than capturable benefits. But it is not clear that this latter condition applies for genetic resources and it certainly does not apply to many other functions and values of natural ecosystems. How do we get the market to help conserve those resources for which privatisation (or more generally establishment of property rights) is not really an option because the costs of enforcement and transactions are too high?

The property rights approach (due originally to Coase, 1960) is one of two popular approaches in the literature for internalizing environmental costs. The other is the “environmental tax” approach (developed originally by Pigou, 1920). But Vogel does not even mention the Pigouvian approach. Determining the conditions under which each of these approaches is most appropriate hinges mainly on the relative magnitude of transaction and enforcement costs.

Vogel draws the analogy between property rights for computer software and genetic resources, and this analogy will serve to elucidate the transaction and enforcement cost problem and how Pigouvian taxes can function as an alternative. The use of software (or genetic resources) could be taxed and the revenues returned to the software authors (or holders of the genetic resource rights) in proportion to their use. For example, a tax could be levied on all computer hardware purchased, software could be copied and distributed freely, and a survey of software use could be used to contribute the tax revenues to the software authors. Authors would be rewarded for writing popular software (as with privatisation) but would not have to bear the transaction and enforcement costs involved with the current system of private copyrights. Government intervention is required in both cases, either to levy and distribute the tax or to set up and enforce the copyrights laws. But it can be argued that the transaction and enforcement costs of the tax and disbursement system are much lower than the private copyright system. Or, in other words, there is much useful software that is not being written because the current copyright system has high transaction and enforcement costs.

Likewise, the potential role of Pigouvian taxes in the context of genetic resources. One could tax all "use" of genetic resources (hopefully non-destructive use as with software) and return the revenues to holders of the genetic resource rights, whether these are private individuals, community or tribal groups, or governments, thus giving the resource rights holders a strong incentive to conserve and husband their resources.

A final problem has to do with the assertion that sustainable development is incompatible with non-equilibrium thermodynamics (NET). This is nonsense. Natural ecosystems are sustainable (they can go on indefinitely) even though they are constantly changing and dissipating energy. They are also constantly bringing in new low-entropy matter and energy to balance that dissipation. No *individual* is sustainable, but the *system* is sustainable, and this does not mean constant, it only means survivable. The same is true for economic and ecological economic systems. They are, at least in theory, sustainable at some level of complexity consistent with their inputs of low-entropy matter and energy. The real questions become: at what level? and how do we assure sustainability over as wide a range of possible uncertain future contingencies as possible?

Vogel neglects this important issue of scientific uncertainty, and the precautionary principle that has developed in the environmental community to address it (Bodansky, 1991). This principle suggests that when there is uncertainty about environmental impacts society should err on the side of caution. Biodiversity is steeped to overflowing in uncertainty, yet the privatisation scheme seems to require quite a high degree of certainty about everything from what genetic resources are out there to who uses them to whose land they came from. An alternative approach worth considering in cases of high uncertainty is the "precautionary polluter pays principle" (4P) (Costanza and Cornwell, 1992) that would charge for both known and potential damages to genetic resources, with a potential for future refunds if damages are less than the potential, combined with a distribution of "use" fees to genetic resource owners as described above.

If we are going to address the mass extinction problem, we must bring market forces to bear. Vogel's book adds to the debate on how this can best be accomplished and makes many of the ideas accessible to a broad audience in a way that other texts do not. The policy recommendations are fairly narrow, however, and the book would benefit from the inclusion of a broader range of policy options.

## REFERENCES

- Berkes, F. (Editor), 1989. *Common Property Resources: Ecology and Community-Based Sustainable Development*. Belhaven Press, London.
- Bodansky, D., 1991. Scientific uncertainty and the precautionary principle. *Environment*, 33: 4-44.
- Bromley, D.W., 1991. *Environment and Economy: Property Rights and Public Policy*. Blackwell, Oxford, UK.
- Coase, R.H., 1960. The problem of social cost. *J. Law Econ.*, 3: 1-44.
- Costanza, R. and Cornwell, L., 1992. The 4P approach to dealing with scientific uncertainty. *Environment*, 34: 12-20, 42.
- Ostrom, E., 1990. *Governing the Commons: the Evolution of Institutions for Collective Action*. Cambridge University Press, Cambridge, UK.
- Pigou, A.C., 1992. *The Economics of Welfare*. Macmillan, London.
- Young, M.D., 1992. *Sustainable Investment and Resource Use*. MAB/Parthenon, Paris.

ROBERT COSTANZA  
*Maryland International Institute for  
 Ecological Economics  
 University of Maryland System  
 Box 38 Solomons, MD 20688-0038, USA*

## POLICIES FOR A SMALL PLANET

*Policies for a Small Planet: From the International Institute for Environment and Development (IIED)*. Johan Holmberg (Editor). Earthscan, London, 1992, 352 pp., ISBN 1-85383-132-8.

As the IIED can take substantial credit for coining the term 'sustainable development' some 20 years ago, it is appropriate that this same organization should now provide some guidance for actually achieving this goal. In this book, the IIED has set itself the task of advancing the debate about sustainable development, beyond the usual conceptualizing, into the realm of practical policy actions. It succeeds in this undertaking remarkably well through a series of 11 clearly written essays that address economic, environmental and social issues in agriculture, forestry, energy, industry and urban development. Although the authors modestly proclaim that the analyses focus only on developing countries, decision-makers in industrialized countries would also gain considerably from the insights in this book.

A key strength of this compendium is that all of the essays are tied together by advocating policies that promote the concept of 'primary environmental care' (PEC). The concept of PEC, clearly described by Holmberg and Sandbrook, is based on the idea that sustainable development should concern itself first with the overlapping domains of economic, environmental and social systems. PEC policies must thus concurrently address three separate goals at the nexus of these three systems; such policies must satisfy basic economic needs, encourage protection and sound use of the environment, and promote the social goals of empowering individuals and groups.