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MARKETS AND SUSTAINABILITY

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Markets and Sustainability

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Abstract. Do markets lead us to make sustainable choices? If not, why not? And what would we need to do to remedy this? This paper takes a preliminary look at these questions. It identifies three categories of reasons why market choices may not be sustainable, related to valuation of the future, recognition of the benefits provided by environmental assets, and incorrect incentives. It gives examples of cases in which these problems have been corrected, and considers the scope for a more positive relation between market forces and conservation of the environment.

Key words: sustainability, conservation, discounting, incentives, environment.

[1] Based on remarks given at a Conference on Environmental Governance at La Pietra, Florence, July 1996. To be published in the proceedings of the conference, edited by Richard Stewart and published by Cambridge University Press.

Providing a definition is a good way to start talking about sustainability. There is no simple, operational and generally agreed definition that we can lift from the literature, so let me suggest one. Sustainability is doing things that we can safely continue indefinitely: doing things that can be continued over long periods without unacceptable consequences, or without unacceptable risks of unacceptable consequences. This seems to capture much of what is implicit in general discussion, although it is perhaps more focussed than the legal uses traced by Sands.[2] Most people think of current fisheries policies as unsustainable: clearly they are so according to this definition. Energy policies, involving the emission of greenhouse gases, imply an unacceptable risk of climate change, and are unsustainable both in common parlance and by this definition. So are important aspects of agricultural policies, those that result in loss of soil fertility, or in massive run-offs of nutrients into rivers, lakes and ground waters.[3]

Given a working definition, a natural next step from an economic perspective is to ask: Do existing institutions lead us to make sustainable choices? This question is clearly rhetorical: the examples cited above show that the answer is "no". Two more sets of questions follow immediately from this: Why not? And: What can we do about this?

I think we can group the answers to "Why not?" under three general headings. The first heading is that we place too little value on the future. The second is that we do not recognize the great value of many environmental systems: we are not conscious of the importance of natural ecosystems to modern societies. Finally – and this is related to the second heading – the economic incentives are all wrong.

Valuing the Future

Valuing the future is critical to sustainability. Environmental assets provide flows of services over long periods of time. New York's Catskills watershed has purified water and controlled stream flow for hundreds if not thousands of years, and if left intact will continue to do so for at least as long again. Insects have pollinated flowers for much, much longer, and could continue as long again if not driven extinct by pesticides.[4] No

[2] This is close to the definition in J.P. Holdren, G.C. Daily and P.R. Ehrlich, "The Meaning of Sustainability: Biogeophysical Aspects", in M.Munasinghe and W. Shearer Eds. *Defining and Measuring Sustainability: Biogeophysical Aspects*, World Bank, Washington DC 1995, and is the one used in G.M. Heal, *Valuing the Future: Economic Theory and Sustainability*, Columbia University Press, 1998. The Brundtland Report defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." While eloquent, this is very thin on operational content. See World Commission on Environment and Development, *Our Common Future*, Oxford University Press, 1987. Sands suggests that as used legally sustainability involves four components. One is a commitment to preserve natural resources for the benefit of present and future generations. A second refers to 'prudent', 'rational', 'wise' or 'appropriate' use of natural resources. A third is an equitable use of resources, and a fourth implies that environmental objectives are integrated into development plans, and vice versa. See Philippe Sands, "Environmental Protection in the 21st Century: Sustainable Development and International Law."

[3] For more detail, see Vitousek et al. "Human Domination of Earth's Ecosystems," *Science*, vol 277, 25 July 1997, 494-99.

[4] See Nabhan and Buchmann, "Services Provided by Pollinators," chapter 8 of G.C. Daily, *Nature's Services: Societal Dependence on Natural Ecosystems*, Island Press, Washington, 1997.

human systems have such lifespans. Physical assets produced by humans last perhaps ten, perhaps fifty, years: at best their lifespans are measured in decades rather than centuries or millennia. Knowledge and culture are the only assets we produce that can rival natural assets in their durability: Shakespeare thrives at half a millenium, and Plato and Pythagorus at several millennia. Because of the totally different timescales of the capital assets that humans and nature produce, the techniques that we use for valuing capital assets really cannot be applied to natural capital. We value the capital that we produce by cost-benefit analysis, taking as its benefits the present discounted value of the flow of services that it produces. By discounting at rates in the range of 5% to 10%, we in effect choose an implicit time horizon, a date beyond which nothing matters. This is in the region of twenty to thirty years: $e^{-0.05X20} = 0.22$ and $e^{-0.1X20} = 0.05$ so that at a 5% discount rate one dollar twenty years hence has a present value of 22 cents and at 10% its value is 5 cents. When we apply this kind of calculation to environmental assets, we are cutting out most of the contributions that they will make to human societies: we are taking account of twenty years of the contributions of assets that could contribute, at no extra cost, for twenty decades or perhaps twenty centuries. Clearly we are undervaluing them grossly. We have to find ways of doing better.

The Importance of Nature

How important is nature to modern societies? Because of our technological sophistication, we can easily come to see ourselves as remote from and independent of nature. This is wrong and dangerous. Natural ecosystems provide critical infrastructure for all human societies. Societies derive a wide array of important economic and life-support benefits from biodiversity and the natural ecosystems in which it exists.[5] Biologists use the term "ecosystem services" to refer to these. Ecosystem services are the conditions and processes through which natural ecosystems, and the species that are a part of them, sustain and fulfill human life. These services yield ecosystem goods, such as seafood, wild game, forage, timber, biomass fuels, natural fibers, many pharmaceuticals, industrial products, and their precursors. The harvest and trade of these goods represent an important and familiar part of the economy. Natural ecosystems also perform less-appreciated but critical life-support services, upon which the prosperity of all societies depends. These include:

* purification of air and water
* mitigation of droughts and floods
* generation and preservation of soils and renewal of their fertility
* detoxification and decomposition of wastes
* pollination of crops and natural vegetation
* dispersal of seeds
* cycling and movement of nutrients
* control of the vast majority of potential agricultural pests
* maintenance of biodiversity

[5] This discussion draws heavily on, and at some points quotes, G.C. Daily, op. cit. note 3.

* protection of coastal shores from erosion by waves
* protection from the sun's harmful ultraviolet rays
* partial stabilization of the climate
* moderation of weather extremes and their impacts
* provision of aesthetic beauty and intellectual stimulation that lift the human spirit.

This array of services is generated by a complex interplay of natural cycles powered by solar energy and operating across a wide range of spatial and temporal scales. Soil fertility, for instance, is a product both of bacteria, whose fleeting lives may take place in a space smaller than the period at the end of this sentence, as well as of the aeonic, planet-wide cycles of major chemical elements such as carbon and nitrogen. Pest control is created by both natural enemies (e.g., birds; bats; parasitic wasps, ladybugs, spiders, and other predacious arthropods; fungi; viruses) and by climate patterns generated globally. The stratospheric ozone layer that shields Earth's surface from ultraviolet radiation was originally produced primarily by the photosynthetic activities of blue-green algae and by photochemical reactions occurring high in the atmosphere. Ecosystem services operate on such a grand scale and in such intricate and little-explored ways that most could not be replaced by technology.[6] We are threfore very dependent on nature but alarmingly unaware of this and fail to capture this dependence in our economic decisions.

Incentives

What does it mean that the economic incentives are all wrong? A concrete case will make the point. Consider conservation of Amazonian rainforests. This has some costs and some benefits: I believe, as do most people who have thought carefully about this, that the benefits greatly outweigh the costs. The costs are borne by people who live in and around the forest: they are opportunity costs, costs of not being able to use the land for cash crops or for ranching, and of not being able to sell the timber. Some of the benefits, on the other hand, accrue to everyone: to you, to me, to all humans, because they are in the form of carbon sequestration and biodiversity support. Others accrue to people in Brazil, but not to those in the forest region: these are benefits from stream and flood control, regional climate control, and many others. So in essence one set of people pay the bill and another set eat the meal. This is obviously not a stable situation: the bill payers will drop out. We can only expect to forest to be conserved if some of benefits from conservation accrue to the bill payers. The essence of this rainforest example could be replicated many times.

How can we change institutions to avoid these problems? There are three types of change on the agenda: changes in how we value the future, changes in how we value nature, and changes in the economic incentives associated with managing nature. This may seem a tall order, but in fact it is possible to see how all of these things can happen. Four examples will provide much of the groundwork for the arguments that I want to present.

[6] For more details see Daily, op cit. in note 2.

Growing Carbon and the Kyoto Protocol

The Kyoto Protocol provides an interesting example of how markets might provide powerful incentives for environmental conservation. The Protocol contains provisions for carbon sequestration credits: countries that remove carbon from the atmosphere, for example by growing trees, will receive credits for this in the form of tradable greenhouse gas emission permits. No one knows what exactly the value of these permits will be. Preliminary economic calculations[7] suggest that their value could be in the range $10 to $40 per ton of carbon or equivalent. What would this mean for the economics of conserving tropical forests? Again, we don't know for sure, but we can do some rough calculations. Growing moist tropical forests remove carbon from the air at a rate in the range of 7 to 20 tons per hectare per year, possibly more.[8] Taking these two ranges of numbers together, we see that growing forests could be remunerated by carbon sequestration credits at a rate of $70 to $800 per hectare per year. This is a lot of money: ranches in Costa Rica, for example, make profits of at most $100 to $125 per hectare per year. Reforesting has a one-off cost of planting the seedlings, which can be as high as $900 per hectare.[9] Even with this initial cost, it seems possible that if the world as a whole pays for just one of the many services of tropical forests, then this could change radically the economics of forest conservation. On a very small scale, some of this is already happening through the schemes for joint implementation encouraged by the Global Environment Facility and the World Bank.

Watersheds

Another example is already up and operating. In 1996 New York City decided to invest between $1 and $1.5 billion in conserving environmental capital, in the expectation of producing cost savings of $6-8 billion over ten years, giving an internal rate of return of between 90% and 170%.[10] This return is an order of magnitude higher than is normally available, particularly on relatively riskless investments. Ninety percent of New York's water comes from a watershed in the Catskill Mountains. Until recently purification process carried out by roots and microorganisms in the soil as the water percolates through, together with filtration and sedimentation occurring during this flow, were sufficient to cleanse the water to US Environmental Protection Agency standards. Recently sewage, fertilizer and pesticides in the soil reduced the efficacy of this process, to the point where New York's water no longer met EPA standards. The city was faced with a choice: restore the integrity of the Catskill ecosystems, or else build a filtration plant at a capital cost of $6-8 billion, plus running costs of the order of $300 million annually. In other words, New York had to invest in natural capital or in physical capital.

Which was more attractive? Investment in natural capital in this case meant buying land in and around the watershed so that its use could be restricted, and subsidizing the construction of better sewage treatment plants. The total cost of measures of this type needed to restore the watershed is expected to be in the range of $1-1.5

[7] Conducted by the Program on Information and Resources at Columbia University using a modified version of the OECD's GREEN computer model of the global economy.
[8] Personal communication, Steve Pacala, Ecology Department, Princeton.
[9] Personal communication, Daniel Botkin.
[10] The discussion of the New York watershed case is taken from G. Chichilnisky and G.M. Heal, "Economic Returns from the Biosphere", *Nature*, February 12th. 1998, vol. 391 pp . 629-30.

billion. So investing $1-1.5 billion in natural capital could save an investment of $6-8 billion in physical capital. These calculations are conservative, as they consider only one watershed service, although watersheds, typically forests, often provide other important services.

In 1997 New York City floated an "environmental bond issue", and will use the proceeds to restore the functioning of the watershed ecosystems responsible for water purification. The savings produced will meet the cost of the bond issue: the savings are the avoidance of a capital investment of $6-8 billion, plus the $300 million annual running costs of the plant. The cash that would otherwise have gone to these will pay the interest on the bonds. These cost savings could have been "securitized," which means pledging a fraction of them to the providers of the capital as a return on their investment. The city could have opened a "watershed savings account" into which it paid a fraction of the costs avoided by not having to build and run a filtration plant, which would pay investors for the use of their capital. This financial structure is already used in securitizing the savings from increased energy efficiency in buildings. Securitization of the savings involves issuing contracts, securities, entitling their owners to a specified fraction of the savings. Typically these contracts are tradable, issued to the providers of capital, and can be sold by them, even before the savings are realized. This is a way of making investment in saving energy attractive to the investing public and institutions: it does not imply any transfer of ownership of the underlying asset. The US Department of Energy has a standard protocol for estimating the savings from enhanced building energy efficiency and several financial agencies are willing to accept these estimates of energy savings as collateral for loans. The purpose of securitization is make it possible to finance projects such as New York's watershed restoration without using the credit of the City itself, an important issue in developing countries whose metropolitan areas often do not have credit ratings comparable to New York's.

One could take the introduction of market forces a step further. Imagine a corporation managing the restoration of New York's watershed. It has the right to sell the services of the ecosystem, the provision of water meeting EPA standards. Ownership of this right would enable it to raise capital from capital markets, to be used for meeting the costs of conserving New York's watershed. Of course some regulation would be needed: for example, the corporation would be a natural monopoly so that it would be appropriate to regulate its prices. It would also be reasonable to place some restrictions on the modifications that it could make to the natural ecosystems in the watershed area.

Ecotourism

Another powerful example comes from South Africa, in the form of the Conservation Corporation, or Conscorp.[11] This imaginative venture has capitalized on the demand for ecotourism and hunting: this demand is such that land yielding $25 per hectare annually for ranching and $70 per hectare in cropping can yield between $200 and $300 per hectare as part of a reserve managed for tourism or hunting. Conscorp contracts with landowners to incorporate their land in its reserves: it does not buy the

[11] Their web site is http://www.world-travel-net.co.uk/conscorp. For more discussion see http://economics.iucn.org . A paper on the IUCN web site by Terry Anderson, "Enviro-Capitalists: Why and How to Preserve Their Habitat" provided most of the material on Conscorp used here.

land outright. Landowners have to maintain their land in accordance with tightly specified regulations and to stock it with specified animals. Conscorp manages the business part of the operation, bringing tourists and hunters, building facilities and providing guides and vehicles. To date they have restored several hundred thousand hectares of farmland to their original ecosystems. An interesting detail is that the presence of lions will add about 30% to the revenues from an area, so that the incentive to restock with these is great. Supporting lions, at the top of the food chain, requires that most of the rest of the chain beneath them be there: what the lions eat, what the lions' food eats, and so. There is a strong economic incentive to do a thorough job of restoration. This is in fact clear from the very explicit rules used by the Conscorp, whose Articles of Association for a specific reserve state that its aims are "to promote and conserve endemic wildlife within the confines of the area ..; to establish the Reserve as a sanctuary in perpetuity for endemic wildlife and habitat so as to ensure sustainable resouce utilization …; to endeavour to increase the area of the Reserve; and to maximise the long term economic and ecological value of the properties… ." Landowners even agree not to keep any domestic animals, dogs and cats included. An interesting quote from a South African writer captures some of what is happening in this movement:

> "The interesting thing as that untold hundreds of thousands of hectares and morgen that even a few years ago were scrub grazing for a mixture of game and cattle have now been entirely allocated to game. Why? Economics, as always. Game pays its own way, eats nearly anything, is more resistant to disease and predators and generally produces a higher and better use for the land … . Even the old enemies become assets to the farmer who switches from cattle to game. One friend of mine used to lose as many as thirty calves a season to leopards … . Now those same leopards are worth a cool $3000 to $4000 to sport hunters, not a bad trade-off for animals that caused a liability of well over ten grand and had to be poisoned! Tell me, is that bad for leopards?"[12]

Prospecting for Pharmaceuticals

Bioprospecting is another activity that can yield cash for conservation. Bioprospecting means seeking for leads in the development of new drugs, or new chemicals for use in agriculture, by looking at biological resources. As a matter of fact, over 60% by value of prescription drugs in the US are or were initially derived from plants and insects, so this is a reasonable place to start looking. The key point is that certain plants and animals are known to produce substances that are highly active pharmacologically. Plants that live in insect-infested areas produce substances that are poisonous to insects, and these have been used as the basis for insecticides. Some snakes produce venom that paralyses parts of the nervous system, and others produce venom that reduces blood pressure. Other insects produce anti-coagulants. All of these have been adapted for medical use. Observations of this type have led most major drug companies to pursue bioprospecting as a way of finding new pharmacologically active substances to serve as a basis for drug development. Typically they have sought these compounds in the tropics, in areas where there is extensive inter-species competition. They have been willing to pay quite substantial sums for access to these regions, and have made deals

[12] Capstick, cited by Anderson, op cit. note 9

with host countries that involve giving them a royalty on the products that might eventually be based on this prospecting. Such royalties could be large relative to the incomes of the countries concerned. Preliminary calculations have suggested that in some the world's biodiversity hotspots, the right to bioprospect may be worth as much as $9000 per hectare, about a century of ranching income.[13]

These examples – carbon sequestration and the Kyoto protocol, the New York watershed, the Conscorp and bioprospecting – make two points. One is that the market can be used to attach a value to certain natural assets. The second is that, if this is done, the incentive problem can be corrected. If the market will yield a higher return through conservation than through any other use, then entrepreneurs will find a way to conserve. Of course, they are particular examples: they do not imply that all valuable natural capital can be conserved this way. What they do suggest is that we should look more into the potential of this approach. Preliminary estimates suggest that up to ten percent of the land area of the US, and a comparable or greater area worldwide, could be economically conserved on the grounds of watershed protection.[14] I am not aware of comparable studies for ecotourism, but this has certainly become a major industry in several regions of the world, including Central America and East and Southern Africa. Some countries in these regions are now earning about one third of their foreign exchange from ecotourism.

The Future Again

There is one issue that the examples do not address: the valuation of the future relative to the present. There are several different points that matter here. One is that financial markets can be useful. Suppose that a developing country has valuable environmental assets, such as forests, and can derive some income from these, for example by carbon sequestration or bioprospecting. But suppose in addition that this country is very poor, and is in a state of economic and financial crisis, in desperate need of income. Many countries meet the assumption of being desperately poor, but unfortunately not the assumption of deriving income from carbon sequestration or biodiversity: Indonesia is very poor, in a state of crisis and in urgent need of income. Sadly it is not yet able to generate income from the services that its unique and extensive biosphere provides to the rest of humanity. Our hypothetical country faces a steady stream of income continuing into the future from its environmental assets, but has an acute need for income now. It would gladly trade future income for present income, and the inability to do so might lead it to choose the strategy of selling forests as timber, which gives lots of cash now and none in the future, rather that conserving them, which gives less cash now but more in total. Here financial markets can help: one of their main purposes is to move income over time, and let people and institutions spend now in anticipation of future income. This is exactly what a mortgage does: lets the borrowers consume in excess of income now in exchange for consuming less than income in the

[13] See G.C. Rausser and A.A. Small, "Valuing Research Leads: Bioprospecting and the Conservation of Genetic Resources", paper presented at the Conference on Managing Human-Dominated Ecosystems at the Missouri Botanical Gardens, March 1998.

[14] These numbers come from "A Business Plan for Ecosystem Services: Extending the New York City Watershed Model to Other Geographic Regions and Other Ecosystem Services," paper presented by W.V. Reid of World Resources Institute at the Conference on Managing Human-Dominated Ecosystems at the Missouri Botanical Gardens, March 1998. In this paper, Reid begins to explore the scope for generalizing the New York case to other regions.

future. In a situation such as the one we have described, financial institutions or markets could readily provide current income against the security of repayment from future environmental income. To put flesh on these bones, consider the case of Costa Rica and Merck. Costa Rica's InBio signed an agreement with Merck under which it provides Merck with specimens to be tested for pharmaceutical potential, in exchange for a one-time payment and a royalty on any drug eventually produced. The right to a royalty is a right to a part of the profits of specified Merck products. This right could eventually produce huge payments, but these may be twenty or more years in the future: after all, it can take fifteen years to take a drug from conception to market. Costa Rica has here a right to an uncertain future income. Some or all of this right could be sold for cash now: it constitutes a form of security deriving its value from profits on certain Merck products. If Costa Rica were to suffer from an acute cash crisis, this ability to convert the agreement into cash now would enable it to bring future income forward and avoid pressure to liquidate environmental assets because of cash constraints.

The use of financial markets to anticipate income does not change fundamentally the way we value the future relative to the present. It allows us to avoid situations where current income shortages might force us into shortsighted choices, which we will subsequently regret. A current income crisis can push the value of the future into insignificance relative to the present. The ability to anticipate future income can avoid this. Can we go further and actually induce more future-oriented valuations in general? This is a complex question, to which we don't yet have all the answers. Two points seem clear, however. One is that certain types of institutions make it their business to lobby for future-oriented decisions, and to try to tip the scales in that direction. These are the NGOs (Non-Governmental Organizations). In particular, in the UK, the National Trust has as its primary purpose the purchase of land and properties of outstanding environmental or historical importance, to be held in trust for the future. The Nature Conservancy in the US has a similar role vis a vis the environment. More should be done, but these institutions indicate a potential mechanism for implementing future-oriented decisions even in a society where most decisions involve short time horizons.

What about adopting a more future-friendly decision-making algorithm than exponential discounting? Certainly there are possibilities here.[15] There are approaches to valuing income streams over long time periods that give more weight to the future than the standard practice, and that are just as compelling and logical, indeed from many perspectives even more so. In fact, empirical studies seem to suggest that individuals do not follow the standard model when making choices over time. It appears that most individuals use discount rates that are lower, the longer the time horizon that they consider. One rationalization of this is that they respond to proportional rather then absolute changes in distance in time. Postponing a reward by one year from the first to the second year, and by one year from the twentieth to the twenty-first, are both one-year postponements, but one matters a lot and the other doesn't. One is a doubling and the other a 5% change. If it is the percentage change that matters and not the number of years, then people discount according to the logarithm of time, thus: $e^{-0.1 \log t}$ for a ten

[15] They are discussed at length in Heal, op cit, note 1. An interesting possibility is to be found in G. Chichilnisky, "An Axiomatic Approach to Sustainable Development," *Social Choice and Welfare*, 1996, 13 (2) pp 219-48.

percent discount rate.[16] This leads to a far higher relative value on the future. For example, after one hundred years discounting logarithmically at ten percent gives almost fourteen thousand times more weight than discounting exponentially. After fifty years, the ratio is one hundred. Over only ten years, the difference is a factor of two.

Conclusions

What can we conclude about market forces and sustainability? Which services of the environment are amenable to management by the market? One clear prerequisite is that the ecosystem to be conserved must provide goods or services to which a commercial value can be attached. Watersheds satisfy this criterion: drinkable water is becoming increasingly scarce, and indeed the availability of such water is one of the main constraints on health improvements in many poorer countries.

Commercial value of an ecosystem service is necessary but not sufficient for privatization: some of that value has to be appropriable by the producer. A critical issue in deciding whether ecosystem services can be privatized, is the extent to which they are public goods. Pure public goods are challenging to privatize: they are goods which if provided for one are provided for all. It is hard, though often not impossible, to exclude from benefiting from their provision those who do not contribute to their costs, so that their providers cannot appropriate all of their returns. Water quality is a public good, in the sense that if it is improved for one user of a watershed, then it is improved for all. But the consumption of water itself is excludable, so the watershed case involves bundling a public with a private good. Ecotourism is also a hybrid: the existence of stable populations of flora and fauna is a public good from which everyone benefits to some degree. But this is not what Conscorp and its competitors are selling: they are selling room-nights in game lodges, meals, the services of guides, and many other accoutrements of up-market tourism. These are private goods. So in both of these cases conservation conserves a public good (water quality, stream flow, wild life), but the incentive to do this comes from the resulting enhanced ability to sell an associated private good. The presence of a public good means that the market incentives to conserve are less strong than required for overall economic efficiency, but by capturing some of the value of that good the market improves on the pre-existing situation. The same is true of bioprospecting, although in this case there is the additional interesting point that the final product, knowledge, has many of the features of a public good, and so has to be protected by intellectual property rights regimes.

Carbon sequestration is different. Here the market is paying for a pure public good. Using markets in this way is novel: the first significant initiative was in the US 1990 Clean Air Act, which introduced a system of tradable permits for controlling the mission of sulfur dioxide. In this case the conditions for overall economic efficiency depend on the initial distribution of abatement rights, leading to an interesting connection between efficiency and distribution.[17]

To summarize: to date, markets have not performed notably well in conserving our planet's environment. Indeed, they have done quite the opposite. But this is not intrinsic in markets. They can be reoriented in a positive direction, in which case their

[16] See Heal, *Valuing the Future*, op. cit.
[17] See G. Chichilnisky and G.M. Heal (eds.), *Environmental Markets*, Columbia University Press, 1998.

potential for good is immense. Markets need legal infrastructure, as we see from the role of the Securities and Exchange Commission in financial markets in the US, from the shortcomings of markets without legal infrastructure in Russia, and from the enabling role of the 1990 Clean Air Act in the US. Lawyers and legal scholars with an environmental bent should be focusing on how to play a similar enabling role more broadly.

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