Loyola of Los Angeles Law Review

Volume 27
Number 3 *Symposium: Twenty-Five Years of Environmental Regulation*

Article 19

4-1-1994

Environmental Law—Old Ways and New Directions

Turner T. Smith

ENVIRONMENTAL LAW—OLD WAYS AND NEW DIRECTIONS

*Turner T. Smith**

I. INTRODUCTION

In the early years of the "Earth Day" period, environmental law was seen by most as a set of new legal tools for a great new moral crusade. Almost twenty-five years on, we now have, or ought to have, a more subtle understanding of environmental law—an understanding that derives from a better appreciation of the nature of environmental problems, and of the role of law in their resolution.

This Essay contains personal reflections. It begins with a short explanation of my viewpoint on the nature of environmental law. It then examines why reflection is in order, and discusses what we have done right and what we have done wrong. It closes by looking ahead to the future of environmental law.

II. A PERSPECTIVE ON ENVIRONMENTAL LAW

Environmental degradation is, at base, caused by "externalities"—costs that one economic unit imposes on others and need not reckon with itself. Thus, environmental policy need not rely solely on morality for its principles and execution. Much of what we want to achieve can be had simply by understanding how and where external costs exist, what their extent is, and how they can be reimposed on the relevant economic actors.

Law is inextricably intertwined with environmental policy because it is the legal structure that gives rise to the externalities. Tort, property, contract, and procedural laws traditionally define the basic rights and responsibilities of economic actors, thus providing the framework within which a free market economy operates and defining which costs each economic unit must bear. The contours set by legal systems worldwide typically tend to reimpose only those costs that are most easily identified and measured. The developments in environmental law of the last twenty-five years represent an effort to move beyond these traditional

* Partner, Hunton & Williams; B.A., 1962, Princeton University; LL.B., 1968, Harvard Law School.

limits, using both new administrative law tools and new versions of old liability rules.

Thus, environmental law can, in a sense, be defined as the complete legal framework governing our interaction with the natural environment. Viewed in this way, we have always had an environmental law, and not simply because there were smoke control ordinances in old London. It is at least partly for this reason that we have debated over the years whether environmental law is a discrete and separate field of law or simply a new way of looking at all of the old fields.

As a result, environmental law, properly considered, is less a matter of inventing new legal tools to force compliance with new moral values, than of understanding how the old ones have failed us in achieving goals and values we have held all along. It is also a matter of deciding how we can restructure the legal framework we already have so as to achieve the ends it has heretofore failed to serve in the most efficient, least disruptive manner.

In a free-market economy, identifying the existence and determining the extent of "external" costs has the benefit of pointing us to the basic causes of the problems and the factor most directly relevant to the extent and type of change needed. This approach also forces us to consider automatically the powerful market incentives to which all economic actors—big corporations, governments, particularly when acting in their proprietary capacity, and individuals alike—are constantly subject, yet that operate inexorably to undermine any form of regulation that fails to consider them. This in turn helps to avoid unintended consequences by enabling us to foresee how the various actors in a dynamic market system will react to new requirements, and thus how such requirements will actually work when implemented. Finally, this approach makes us alert to opportunities to design new requirements that use the existing incentives of the marketplace for reinforcement, or even, where possible, for implementation.

This may seem oversimple, but it is a matter of the spirit with which one approaches the subject. I submit that for purposes of developing environmental policy, it is as important to understand why the desired results are not already being achieved as it is to understand what those results should be. It may in fact be more important, since the latter may be fairly obvious, at least in principle, and the former much more complex. Further, to understand how to achieve the results, and the specifics of how far to pursue a policy in the face of competing objectives, an understanding of the former may be crucial. In short, in devising effective environmental laws, it is more useful to visualize environmental law

as a form of economic regulation—that is, the regulation of actors within an economic system—than as a moral crusade.

III. WHY LOOK BACK

Starting from virtually nothing in the late 1960s, we have created in the United States a body of statutory law, regulation, guidance, and administrative and judicial jurisprudence that is epic in its size and scope and Talmudic in its complexity. Annealed in the political and ideological fires of public debate, reflecting many hard-fought compromises, and balanced between competing forces and considerations, it now may seem immutable.

One of its great strengths, but also one of its limitations, is that this body of law was driven, in its creation, by specific fact situations. The jagged definitional line drawn by the Resource Conservation and Recovery Act (RCRA)[1] between "wastes" and "products," straddling the world of recyclables, springs to mind here.

Our current regulatory edifice is, however, by no means complete, and it by no means has the inherent force of revealed truth. For better or for worse, it simply represents the sum of what we have learned and achieved to date in restructuring the legal framework within which American society carries on its activities, so as to move toward a sustainable relationship between man and his supporting environment. In a sense, United States environmental law, like the earth's rock strata and their fossilized contents, is a historical record of the evolution of the subject, and hence of many of its policy and process successes and failures.

What use, then, can we and others make of this historical record? All can mine it for its lessons in general policy. As lawyers specifically, however, we should study it critically to see: where it works, and where it does not; why it works or why it does not; and how we can generalize about the proper role of law, legal institutions, and regulatory methods in this field. While we spill ink constantly, and in great quantities, on these subjects, it is not often that we take a reflective and historical approach in doing so, and perhaps even more seldom that we attempt to learn the cross-cutting general lessons that our experience can teach us. For example, one looks to materials developed in-house by the Environmental Protection Agency (EPA) in order to find useful analysis of the proper overall design and implementation of an environmental regulatory en-

1. 42 U.S.C.A. §§ 6901-6992k (West 1983 & Supp. 1993).

forcement program.[2] Yet we have the best basis in the world for learning such lessons. Our historical record—twenty-five years of experience—provides a much richer and concrete set of legal rules and institutions to draw on than exists anywhere else in the world.

Perhaps the subject is still too new and the issues too complex and emotional for us to be able to reflect productively. Further, the difficulty of the subject matter should not be underestimated. Restructuring the legal framework within which humans interact with their natural environment is no small task. Consider the complex interrelationships both in the structure and functioning of the natural world and in the rapidly evolving, geometrically growing global industrial economy that we are creating. It is natural that we should grope along, case-by-case, in developing our basic factual understanding in such circumstances. Since that understanding is the keystone to, and a prerequisite for, intelligent policy judgments, it is also not surprising that our policy has developed in a similar halting fashion. This is not to say that decisions cannot or should not be made without perfect knowledge. Scientific uncertainty is epidemic in this field. Rather, it is simply to affirm that policy and regulation based on knowledge and understanding, when it can be had on a timely and affordable basis, is always better than policy and regulation that is not. Notwithstanding that our efforts to date have resembled the blind men examining the elephant, it is critical that we step back, when we can, to learn from the process.

Learning general lessons from the field of environmental regulation will help us to see the way ahead. It will illuminate analogous issues in related fields of law and policy. It will provide assistance to those all over the globe who are also struggling with the proper design and implementation of environmental regulation in their own different legal, economic, and cultural contexts. Finally, examining our own short heritage in environmental law dispassionately will enable us to better understand the results being obtained in other legal and cultural systems. Comparing these systems with our own, will teach us lessons in the long-neglected field of comparative regulation.

2. The Environmental Protection Agency's Office of Enforcement has produced teaching materials on the principles of environmental enforcement; it has used these instruction materials in Central and Eastern Europe.

IV. WHAT HAVE WE DONE RIGHT?

So, what have we done right and what have we done wrong? This Essay cannot, of course, yield more than brief reflections on these points. It will serve its purpose, however, if it provokes thought.

Starting on a positive note, an examination of environmental regulation in many other countries convinces me that we have gotten many of the basics right. First, we have properly recognized the central role that law and effective legal institutions must play in environmental regulation. This is particularly important in a free-market system where market signals, absent a restructuring of the legal framework within which the game is played, give every player certain incentives to behave in a socially incorrect way.[3] In many other cultures, laws and legal institutions play a more subordinate role; they are less well regarded, relied on, developed, or respected.[4] In those cultures, many believe that environmental protection is a function of technical expertise and policy judgments alone, with little or no role for law or lawyers—and, frequently, no role for the public either.

My own view is that no free market can work well without clear, well-enforced rules of the game that must, due to the existence of externalities, include certain essential, legally binding and coercive requirements regarding environmental and natural resource issues. Environmental policy debate must address what those legal constraints should be, how they can be most efficient, and how they can interfere least with the proper functioning of the market. Policy decisions alone, however, are not enough.

Likewise, volunteerism, corporate good deeds, and self-regulation are not enough. These are all good things, and should be encouraged. They are no substitute, however, for some form of coercive rule. Even market-based environmental regulation relies on coercion; one is not at liberty to decide whether to pay, as opposed to incur, environmental taxes or charges. The way rules are made effective and brought to bear coercively may differ widely from one culture to the next,[5] but coercive they must be in some accepted form or they will be ineffective in the face of the constant, contrary incentives of the market place—and probably of any other system of organizing economic life, as the results of the com-

3. For a classic analysis of economic externalities, see A.C. PIGOU, THE ECONOMICS OF WELFARE (4th ed. 1962).

4. In Europe, for example, environmental regulation has been traditionally regarded as the preserve of scientists, technicians, and policy makers, with lawyers considered peripheral.

5. *See, e.g.*, Hans Van Zijst, *A Change in Culture*, ENVTL. F., May/June 1993, at 12 (discussing use of "voluntary covenants" in Dutch environmental law).

mand economies in the former communist countries so tragically demonstrate.

Whatever else may be said about our legal and regulatory systems, it cannot be said that we lack legally binding constraints. To the contrary, foreigners I have met criticize the United States for the legalism of our administrative and litigation systems. While I will not defend the worst excesses of our tort law system—for example, punitive damages—and our administrative process—for example, essentially unlimited cross-examination in certain types of adjudicative hearings—it is my view that foreign observers too often go to the other extreme and risk throwing the baby out with the bath water. Whatever the proper balance may be in tort and administrative law processes, we have at least grasped the essential need for legally binding rules in this field of regulation.

Second, we have, on the whole, properly recognized that environmental regulation, while obviously and necessarily founded on technical and scientific judgments best made by experts, deals ultimately with value judgments about acceptable risk, and with the allocation of benefits and burdens among today's players and between them and tomorrow's. These are public issues—the very stuff of public debate. In our country, they are properly seen as political issues, with all the advantages and disadvantages that implies. In short, while environmental regulation must be informed by expert scientific and technical judgments, the decisions as to what to do must be made by the public—in our case by the public's representatives—in an open and politically accountable process.

The legislature can and must set general policies, and in so doing make basic political judgments. In a complex area of regulation like environmental law, however, it cannot effectively do more, although that has not prevented our Congress from trying. Much of the detail of environmental law must be elaborated and implemented through an administrative process, and many of the critical value judgments are necessarily embedded in the elaboration of this detail.[6] The systems we have evolved to bring political accountability, or at least its functional substitute, to bear on the administrative forum are thus of paramount importance. They constitute one of the great achievements of the United States legal system—an achievement that sets us apart from most of the other legal systems of the world.

In the environmental field, we have made the administrative process politically accountable in a number of ways. Perhaps the most important

6. Examples of this are the specific risk levels desired, the details of any risk assessment methodology used, or the averaging time chosen for an environmental standard.

are (1) the relatively structured and formal administrative processes of rule making and permitting; (2) the provisions for citizen participation in administrative lawmaking, implementation, and enforcement, visible in virtually every environmental statute; and (3) the well-developed system of judicial review of administrative action.[7] Indeed, the development of these processes and others in the environmental law context has driven, to a large extent, the development of American administrative law over the last two decades.

Third, we have recognized the need to go beyond the mere enactment of statutes to the development of effective mechanisms and institutions for their implementation and enforcement. This may seem like an obvious point, and we by no means succeed in effective implementation and enforcement all the time. Furthermore, some may say with reason that we implement and enforce to excess. It is clear, however, when looking at regulation outside the United States, and particularly environmental regulation, that nothing effective gets done without this. In a relative sense, the United States system of environmental regulation is a paradigm of successful implementation and enforcement.

Fourth, we have developed very specific statutory and administrative methods for making environmental regulation work in a federal system. These include careful and complex divisions of jurisdiction between levels of government that reflect the strengths and weaknesses of those levels and that differ, for good reasons, with the nature of the subject matter being regulated. For example, ambient air quality standards are set at the federal level in part because human health needs to be protected everywhere and human response to air pollutants tends to be the same everywhere.[8] Ambient water quality standards for aquatic life are guided by the EPA's national water quality criteria, which are intended to measure the universal response of organisms to water pollutants.[9] The states are free, however, to apply criteria that better reflect toxicity in particular water bodies—which will vary from state to state and water body to water body—to the extent backed up by scientific evidence.[10]

Likewise, United States environmental statutes delegate to states in many cases the implementation and enforcement of the principles laid down in federal law, but also contain a series of specific mechanisms that

7. *See* 1 KENNETH CULP DAVIS, ADMINISTRATIVE LAW TREATISE (2d ed. 1978); *see, e.g.*, Clean Air Act, 42 U.S.C. §§ 7401-7671q (1988 & Supp. III 1991).

8. 2 LAW OF ENVIRONMENTAL PROTECTION § 11.01[1] (Sheldon M. Novick et al. eds., 1993).

9. *See* 2 *id.* § 12.05[3][c][i][A].

10. *See* 2 *id.* § 12.05[3][c].

allow the federal government to ensure that the states properly carry through. For example, the Clean Water Act[11] sets the general substantive and procedural framework for water pollution regulation in the United States, but allows the states to issue and enforce the necessary permits.[12] It also, however, (1) requires that the EPA approve the basic state permitting and enforcement program, both as to legal authority and as to the administrative structure and the funding necessary for carrying out the state program; (2) allows the EPA to withdraw the state's authority if necessary; (3) allows the EPA to act in place of the state within the state's territory if the state program is not approved in the first instance or if approval is later revoked; (4) allows the EPA to review every permit issued, and to disapprove such permits and issue federal permits in their stead if they are deemed to be insufficient under federal law; and, (5) allows the EPA to enforce any state permit as to its federal aspects, if it believes that a state is failing to take action where it ought to do so.[13]

While we have yet to succeed in making environmental regulation work perfectly in a federal system, we have done reasonably well in operating within a federal/state relationship that will never be static. The importance of this point cannot be overemphasized in a world riven by ethnic, religious, and other factional disputes. These disputes can in the end only be resolved, given the realities of economic integration, by some form of vertically integrated government. There is a spectrum of "federal" options that runs from tight, centralized systems on the one hand to loose confederal ones on the other. The lessons to be learned from our experience here are of paramount importance worldwide. We simply have more experience making environmental regulation work effectively in vertically integrated governmental systems than anyone else in the world.

V. WHAT HAVE WE DONE WRONG?

The question next arises as to what we have done wrong, and why. How can we and others learn from our chief mistakes? First, we have had our priorities wrong from the outset, and are only now recovering. On the whole, we did first what we knew how to do best, not what needed doing most. We also did first what was politically easiest. We were crisis driven to a large degree, or at least driven by the public's perception of crises.

11. 33 U.S.C.A. §§ 1251-1387 (West 1986 & Supp. 1993).

12. 2 LAW OF ENVIRONMENTAL PROTECTION, *supra* note 8, § 12.05[2][a].

13. *See* 2 *id.* § 12.05.

To some extent this can be excused by our lack of knowledge at the outset. We also did not have the risk assessment methodologies we now have. Other countries, starting now to plow the same fields, can profit by the general increase of knowledge.

Much of what we did at first was what the experts in the field knew how to do. We started in the field of water pollution, for example, by attacking conventional pollutants that sanitary engineers knew how to treat with end-of-pipe controls,[14] rather than the toxic, bioaccumulative pollutants that they were less familiar with, that were at the time less susceptible to easy field measurement at low levels, and that were harder to control. We also dealt from the beginning with control of pollutant discharges into air and water systems that have regenerative capacities, in lieu of dealing first with less reversible matters like habitat destruction and groundwater contamination.[15]

Further, we tackled at the outset the obvious and politically attractive targets, like thermal discharges from large power plants operated by private power companies,[16] while ducking, under public and congressional pressure, the less obvious or politically tougher issues that required voters to change their own behavior—such as the indirect air pollution sources involved in shopping malls, stadiums, highways, and other locations with aggregations of automobiles.[17]

Finally, we reacted to crises of the moment, whether real or manufactured, and our actions were sometimes based on questionable science. The point here is not that there were not real threats, and, indeed, perhaps crises, nor that the threats should have been ignored. The point is that judgment, discretion, and the best available science must be used to identify and rank risks, preferably before they become real crises. Response should be modulated so as to avoid crises, not be driven by them, thus separating the real crises from the imagined ones. In a democracy,

14. The initial effluent guidelines adopted under § 304(b) of the Clean Water Act dealt with a limited range of standard pollutants. It took litigation by environmental groups and a reworking of the statute to force widespread consideration of toxins. *See* 2 *id.* § 12.05[2][a] n.36, [3][a][iii][E].

15. The thrust of early efforts under the Clean Air and Water Acts was pollution control. Only later did effective wetlands control develop under the Clean Water Act's regulatory provisions and there is even yet no comprehensive federal regulatory control of discharges to groundwater—although federal regulation of leaking waste facilities and underground tanks does exist. *See* 42 U.S.C. §§ 7401-7671q (1988 & Supp. III 1991); 33 U.S.C.A. §§ 1251-1387 (West 1986 & Supp. 1993).

16. *See, e.g.*, 2 LAW OF ENVIRONMENTAL PROTECTION, *supra* note 8, § 12.05[3][a][iii][D].

17. *See, e.g.*, 1 FRANK P. GRAD, TREATISE ON ENVIRONMENTAL LAW § 2.03[1], [12] (1993); 2 LAW OF ENVIRONMENTAL PROTECTION, *supra* note 8, § 11.08[3].

this requires honest, straight talking by those on all sides of the issues, rather than agenda driven game playing. It also requires unrelenting public education.

In short, for all these reasons it can hardly be said that we engaged in dispassionate analysis of all the likely problems and dealt first with the ones that we thought most exigent. Sadly, many of these shortcomings persist. Our penchant for fearing and regulating any substance we can measure becomes increasingly untenable as our power to measure extremely low levels improves. The only long-run solution in a democratic society is a higher level of sophistication in the public as to the risk, cost, and benefit decisions we all make daily in our individual and collective lives.

Second, we did not really understand the dynamics of environmental control in a market economy. While market failure and the economic analysis of externalities were recognized aspects of environmental pollution, we did not at the outset approach the problem of environmental regulation as one of restructuring the legal framework that sets the playing field for economic behavior. For example, we originally chose command and control regulation as our primary method of regulation, without any real consideration of market-based or market-driven forms of regulation. This also is a problem that has persisted. My own view is that command and control regulation must form the backbone of any regulatory system, for a number of complicated reasons. It should be market-sensitive, however, and should be supplemented by other forms of market-based or market-driven regulation.

As another example, we adopted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)[18] with almost no understanding of the inevitable impact of its new liability rules on property prices and markets. We debate it today as if it were a matter chiefly of tort law, rather than a fundamental alteration in the property law framework within which the market operates, as it is for landowner responsibilities for on-site damage.

Third, much of our environmental legislation lacks coherence. It was drafted by different and competing congressional committees. It tended to be driven, as noted above, by the political problems of the moment. It got caught up in the institutional conflict between an executive branch that wanted discretion to deal with these complicated matters and a legislative branch that distrusted the executive. The result was a legislative penchant for prescribing detail untenable for statutory legisla-

18. 42 U.S.C. §§ 9601-9675 (1988 & Supp. III 1991).

tion, and for legislatively overriding or extensively reworking certain specific decisions already made by the executive branch. The legislation was also skewed by the pulling and hauling of the various interest groups in the political process and by the resulting compromises during passage. Some of the legislation that ensued, such as CERCLA and the Clean Air Act, represents the worst of United States legislative drafting, and has been salvaged only by great administrative skill, and sometimes courage, at the EPA and by flexible and creative judicial review.

Fourth, we have had inadequate intellectual constructs for regulating some of the most significant subject areas. We developed fairly early an economic externalities model that fit the plant pollution context. We, or, more properly, the Europeans, are just now, however, beginning to expand that basic model to the more complex, multi-actor problem of the life cycle of such products as packaging, autos, and electronics.[19] Products cause external costs due to their design, manufacture, use, and disposal, but the separate actions and decisions of many different people along the way are responsible. Devising techniques that internalize the proper costs at the proper points and give all the various actors better incentives is a much more complex process than internalizing the costs of air or water pollution at a factory.

We developed, after some debate, the models for use of cost-benefit analysis in environmental decision making, but have never cracked many of the practical valuation problems they involve, especially for nonmarket environmental values. Nor have we come up with a neutral valuation unit to replace dollars. We are also still struggling with whether, how, and when to second guess the "scarcity" values that the market presently assigns to nonrenewable natural resources.

Recently, we have developed "risk assessment" methodologies,[20] but as with the cost-benefit theory, many of the detailed issues of practical application are not resolved. Outside of the analysis of single chemical substance risks, the effective everyday use of this tool—for example, for an integrated assessment of all of the risks facing a population surrounding an industrial facility—is still highly problematic. In the meantime, we continue to regulate many risks in isolation, on a media-by-media basis, and we are just beginning to deal with some of the relevant pathway issues, such as sediment contamination.

---

19. *See Select Committee on the European Communities: Packaging and Packaging Waste*, H.L. 1992-1993 (118) 38-50 (prepared memorandum and testimony of Turner T. Smith, Jr.); Turner T. Smith & Lucas Bergkamp, *Analysis and Perspective: Packaging Waste Developments in Europe*, 14 Int'l Envtl. Rep. (BNA) 522 (Sept. 25, 1991).

20. *See, e.g.*, 51 Fed. Reg. 33,992 (1986).

We are developing other tools like biomonitoring[21] and life-cycle analysis,[22] but it is only recently that they have gotten to the point where they are useful. It may be some time before they are sufficiently precise or objective that they can bear the weight of regulatory use in a dispositive, rather an indicative manner. Biomonitoring, for example, is a useful screening tool, but it is my view that chronic exposure tests are not yet sufficiently reproducible or accurate to be used as the basis for enforceable permit effluent limitations. Likewise, life-cycle analysis is a useful tool for corporate planning when judging the relative environmental impacts of alternative courses of action, but is proving to be an inadequate and misleading basis for regulating products, through eco-labelling, in the market place.[23]

Fifth, much of the United States response to environmental problems, starting with the "no discharge" goal of the Clean Water Act[24] and extending through the "best available technology" thrust of the Clean Air Act[25] to the "how clean is clean" issue under CERCLA,[26] has been quite unrealistic. We have not, when dealing with the natural environment, focused sufficiently on the fact that it is ultimately the impact on the human environment that counts, and that there are many tradeoffs with nonenvironmental factors that vitally affect human welfare. We have, as a society, failed to appreciate the limitations on our economic resources—we have not learned the basic "no free lunch" lesson. We have frequently been unwilling even to acknowledge that hard choices need to be made within environmental regulation, much less between environmental goals and other social goals. We have been unwilling to concede that the right way to think about environmental policy issues is in an economic framework, and by consideration of costs and benefits as well as we can measure them. I am not here defending the specific use of classical cost-benefit analysis in any particular application. I am rather arguing that, like it or not, there is no other adequate conceptual frame-

21. Biomonitoring involves using the health of living organisms placed in waste effluent or other tested substance as an indicator of the presence of pollutants. *See* 40 C.F.R. §§ 130.7(c)(1)(i), 131.11(b)(2) (1993).

22. Life-cycle analysis is an attempt to measure the total environmental impact of a product over its life cycle from manufacture to disposal. Its use is prescribed in the European Community's Eco-Labelling Regulation. *See* TURNER T. SMITH, THE CONFERENCE BOARD, REPORT NO. 1026, UNDERSTANDING EUROPEAN ENVIRONMENTAL REGULAITON 15-20 (1993).

23. Frank Arnold, *Life Cycle Doesn't Work*, ENVTL. F., Sept./Oct. 1993, at 19 (1993).

24. 33 U.S.C.A. § 1251(a)(1) (West 1986).

25. 42 U.S.C. §§ 7411(a)(1), 7521(c), 7521(f)(3)(B) (1988 & Supp. III 1991).

26. 42 U.S.C. § 9604 (1988).

work for thinking logically and rationally about the public policy issues we face in environmental regulation.

VI. WHERE DO WE GO FROM HERE?

Given these lessons from the past, where should we be going? In general, we must try to agree on how to think about the problems. If we can do so, then we can at least disagree with more clarity on particular substantive issues. Disagreeing clearly may not be as good as agreeing, but we are never likely all to agree on many of the issues involved in environmental policy. Disagreeing clearly, if it could be achieved, is better than the normal fog of battle that surrounds these issues.

Beyond this general point, we must attempt explicitly to deal with the most important issues first. We need to develop a set of prioritizing principles for doing so, one that takes into account the seriousness of the problem, its immediacy, our likelihood of success in dealing with it, the costs of doing so, and so on. In other contexts, we have developed hard-headed triage principles to guide decision making where immediate action is required and not everything can be done at once. We need such principles here. Less developed countries need them even more.

Second, and related, we must learn to identify the basic "drivers" of these problems. My list in this regard would include (1) population growth, (2) war, (3) lack of economic growth,[27] (4) lack of land use controls in general, and (5) lack of urban planning and land use controls in particular.

My discussion so far has proceeded on the implicit assumption that some form of law and order exists. In an increasing number of places in the world the drivers referred to above, as well as other factors, have pushed the fabric of society to the breaking point—for example, Bosnia, Somalia, and perhaps parts of West Africa—and thus this assumption does not hold. It has been strongly argued that these situations and their ecological implications create some of the most serious and intractable global environmental problems we face, and that they are worsening.[28] In such situations, the types of policies and solutions I have been discussing can hardly even be contemplated until the first step is taken and some form of government authority is reestablished.

I have no illusions that we will make real headway on these matters globally, but even a glance at the living conditions of many of the people

27. Economic growth has two faces—while it causes environmental degradation when not properly managed, it is most important as the essential means for funding environmental protection measures—beginning with those involved in basic sanitation and other health areas.

28. Robert D. Kaplan, *The Coming Anarchy*, ATLANTIC MONTHLY, Feb. 1994, at 44.

on the planet makes clear how fundamental they are to the vast majority of the problems we call environmental. Even if we cannot make headway on them, it will clarify debate on dealing with their inevitable consequences, and make us focus on the costs of opportunities foregone, if we at least face up to the significance of their role and the fact that we are not doing so.

Third, we should note that many of the truly difficult environmental problems—deforestation, ozone depletion, resource depletion, transboundary air and water pollution, and global warming—are global or at least regional and multijurisdictional in nature. Not only are the factual issues themselves complex and challenging, the need for collective, coordinated multijurisdictional response makes the political problems enormous.

The issues that most United States environmental lawyers spend their time on, by contrast, are important in their context, but involve inherently local impacts. Further, the regulatory issues that are the stock-in-trade of United States environmental law today are second and third level problems. We have already tackled many of the basic issues with fair success. We are dealing in most cases now with "diminishing returns"; in many cases, like CERCLA, we lavish more concern and resources on problems than they are worth. Most of the rest of the world is at a much more basic stage in dealing with the inherently local issues. That is why even the basic lessons of our regulatory experience can be so valuable to them.

One of the great tasks for United States environmental lawyers is to redeploy some of the massive amounts of highly trained legal skills that now serve narrow domestic ends—and to apply them to the overarching global and regional environmental problems noted above. This will not be easy because business clients pay lawyers only for what furthers their immediate business purposes. The broader problems, on the whole, do not impinge directly on them yet. Government funding is available for some of the larger issues, but frequently not for legal—as opposed to scientific, technical, or engineering—input. Redeployment is worthwhile, however, because the practical problem-solving skills developed by United States environmental lawyers can prove useful, with appropriate adjustments for the different cultural and legal contexts, in dealing with the larger issues.

Fourth, we must now face up to the environmental problems that cannot be solved by technological fixes alone. It is the "people" problems that are the most difficult to deal with, particularly in a democracy. Urban air pollution in general, and area source pollution in partic-

ular, is a good example here. Another is the need to use land use planning, before the fact, to reduce reliance on costly engineered solutions designed to compensate for poor locational decisions. Clear thinking and a good case will be required, at the minimum, to persuade voters to accept the major changes in life style and behavior that will be involved. If solutions are achieved at all, however, they may be more rational than in the past. This is simply because the voters are likely to prove a much harder sell than corporate America, when their own immediate interests are at stake.

Fifth, within the context of the traditional regulatory issues with which United States environmental lawyers are most familiar, we must learn to deal with the more complex issues—the preservation and management of whole eco-systems, as opposed just to preserving isolated habitats; product waste and nonrenewable resource use issues as well as plant pollution problems; pollution prevention, as well as after-the-fact controls; multisource, multipollutant and multipath solutions,[29] as well as the traditional single source, single media, single pollutant modeling and permitting approach; market solutions to the allocational issues involved in permitting; and the issues in regulating discharges, products or resources in a multijurisdictional, as opposed to a single jurisdictional context.[30]

Sixth, we must learn to approach every regulatory decision and every issue of environmental policy with the recognition that we are necessarily restructuring the envelope of allowable actions, and the incentives, in a dynamic free-market system. Otherwise, we are forever condemned to misunderstanding the reactions we will provoke among the players, and to having markets constantly give them signals that undermine the regulatory effort. Further, we fail in many cases to take advantage, where we can, of the market system's existing incentives, which can help us achieve decentralized, market-driven responses that relieve us of direct command and control regulation. Whatever one thinks of the relevance and usefulness of such matters as cost-benefit analysis and other forms of consideration of costs in public decision making on environmental issues, it is at least clear that any regulatory action is taken on the market playing field. Failure to take this into account explicitly in designing the regulatory approach is foolish.

29. For example, involving region or basin-wide permitting efforts; integrated, multimedia permits, inspection and enforcement; best practicable environmental option concepts, et cetera.

30. I speak here of multijurisdictional issues in the horizontal or geographical aspect, rather than in the vertical or federal aspect.

Finally, it is now time to study the proper use of the various "tools" of regulation in the law-making, law-applying, and law-enforcing areas. It is important that we evaluate these tools, such as rule making, permitting, registration, notification, certification, reporting, effluent fees, other charges or taxes, administrative penalties, and so on. The point here is to assess them in a generic way, across media, programs, and types of environmental problems. By assessing the elements essential to their effective use, their successes and failures, their strengths and weaknesses, and their best and worst uses, we can begin to evolve general principles to guide their application in various aspects of environmental regulation.

VII. CONCLUSION

The gist of my message is that while much has been learned in the last twenty-five years of American environmental law, the field is yet young. We are just now at the point where we and others can mine our own extensive experience to develop both a coherent theory of effective environmental regulation independent of a particular national legal system or of particular economic systems, and a systematic but practical understanding of the basic tools necessary for its implementation. Even as we reformulate our views on these basics, however, we still face great challenges in the more complex aspects of implementing environmental regulation in a dynamic industrial market economy. Finally, lying beyond these issues, are the much greater challenges outside our borders, as effective environmental regulation struggles to be born in a wide range of different legal, economic, and cultural contexts around the globe. This is the next great frontier of environmental law.