

Tulsa Law Review

Volume 44
Number 1 *Environmental Sustainability*

Volume 44 | Number 1

Fall 2008

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Recommended Citation

John C. Dernbach, *Navigating the U.S. Transition to Sustainability: Matching National Governance Challenges with Appropriate Legal Tools*, 44 *Tulsa L. Rev.* 93 (2008).

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NAVIGATING THE U.S. TRANSITION TO SUSTAINABILITY: MATCHING NATIONAL GOVERNANCE CHALLENGES WITH APPROPRIATE LEGAL TOOLS

John C. Dernbach*

I. INTRODUCTION

In 1992, at the United Nations Conference on Environment and Development, or Earth Summit, in Rio de Janeiro, the United States and virtually every other nation endorsed an ambitious plan for achieving sustainable development in their own countries and to assist and cooperate with other countries in doing so. But what has the United States achieved?

Despite its commitment to adopt and implement a national strategy for sustainable development and to lead national efforts toward sustainability, the United States has failed to do so. Yet there has been a sharp increase in sustainable development efforts, particularly since 2002, in at least six key areas: local governance, brownfields redevelopment, business and industry, colleges and universities, kindergarten through 12th grade education, and religious organizations. While relatively little “top down” progress has occurred, there has been considerable movement in these “bottom up” areas—areas where public and consumer demand for progress has been strongly felt.

The George W. Bush administration certainly deserves much of the blame for the federal government’s failings—for repudiating the Kyoto Protocol, for failing to put in place a second-best program to reduce greenhouse gas emissions, and for attempting to implement a polarizing anti-environmental agenda on a broad range of issues ranging from air pollution and biodiversity to the very science on which environmental decisions are based. Even Bill Clinton, for most of his presidency, was only lukewarm on environmental protection despite having Al Gore as vice president. Yet his predecessor, George H.W. Bush, while not remembered for his environmental agenda, at least supported the most recent piece of major environmental legislation, the Clean Air Act Amendments of 1990. His administration also agreed to the international sustainable

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development plan endorsed at the Earth Summit in 1992.

The obvious point is that U.S. environmental policy waxes and wanes with different administrations and varying electoral moods. While this is an accurate, even if oversimplified, description of what occurs, it is worth asking whether this is what we should want or, more pointedly, what we need. To be very clear, elected and appointed officials in a democratic society should be responsive to the will of the electorate. And the “bottom up” growth of sustainable development efforts in recent years indicates that future presidential administrations are likely to be more supportive. Yet sustainable development would require the U.S. to implement over decades a significant substantive agenda that includes major reductions in its huge ecological footprint by, among other things, dramatically reducing its consumption of energy, materials, water, and land. How do we create an appropriate legal structure to reconcile those two objectives?

This question is important because the United States has a large global footprint, consuming one quarter to one third of the world’s energy and natural resources on an annual basis.¹ The costs of this level of resource use—to our economy, environment, and national security—are enormous. Reducing this level of resource use through greater efficiency, recycling, and reuse would strengthen our economy, create jobs, improve our national security, and improve the quality of our environment.

Such efforts would likely have international consequences as well. Because of its international cultural influence through television, film, and music, the United States models “the good life” to people throughout the world—a life that is shown to depend on significant consumption of energy and natural resources. U.S. citizens use more than twice as much energy as their European counterparts, six times as much as the Chinese, and more than twenty-one times that of Africans.² If the United States provided attractive and achievable models of sustainable development, it would show the world that a large ecological footprint is not needed to achieve high quality of life. This would encourage much of the rest of the world to pursue similar models. On the other hand, if the United States continues to pursue its current course, other countries—with fewer economic and technological resources—will be less likely to follow a sustainable course.

This question is also timely. The inauguration of President Barack Obama in January 2009 offers an opportunity to revisit questions and start afresh.

Finally, the question of an appropriate legal structure for sustainable development is important because most national efforts on sustainable development so far have focused primarily on policy changes, not law.³ While it is difficult to envision how sustainable development can occur without a legal foundation, the issue of an appropriate legal foundation for sustainable development at the national level has received less attention than it deserves.

1. John C. Dernbach, *Synthesis*, in *Stumbling toward Sustainability* 1, 2–3 (John C. Dernbach ed., Envtl. L. Inst. 2002).

2. Energy Info. Administration, *Intl. Energy Annual 2006: Table E.1c World Per Capita Total Primary Energy Consumption, 1980–2006* (Dec. 19, 2008) (available at <http://www.eia.doe.gov/pub/international/iealf/tablee1c.xls>) (calculations by author from table).

3. Daren Swanson & László Pintér, *Governance Structures for National Sustainable Development Strategies*, in Organisation for Econ. Co-Operation & Dev., *Institutionalising Sustainable Development* 33, 45–46 (Illustrated ed., OECD Publg. 2007) (explaining that only four of the 20 national sustainable development strategies studied—Canada, Switzerland, Belgium, and France—were based on legal requirements).

Section II provides a snapshot of U.S. sustainable development efforts in recent years and an outline of recommendations for the next five to ten years. These are taken from *Agenda for a Sustainable America*, a book published by the Environmental Law Institute that brings together 41 contributing authors from a wide variety of disciplines.⁴ Section II also provides a context for the rest of this Article by providing an outline of the challenges of achieving sustainable development.

Section III explains the required characteristics of national governance for sustainability. As Section III shows, sustainable development requires a type of governance that is consistent and steady enough to guide continuous progress toward sustainability and yet adaptive enough to respond to new conditions and information. Governance, rather than government, is used in this Article to connote a system of problem solving that includes government as a major actor but not necessarily the only decision maker.⁵

Section IV outlines the kind of legal structure and tools that are needed to provide that kind of governance.⁶ Section IV also evaluates existing legal tools in terms of their ability to foster sustainable development in the United States, with particular emphasis on environmental law and the Governmental Performance and Results Act (GPRA). As Section IV explains, there is a considerable gap between the legal tools we have and the tools that are needed.

II. SUSTAINABLE DEVELOPMENT AND THE UNITED STATES

A. *The Challenge of Sustainable Development*

Since the end of World War II, and probably earlier, we have had a model for improving human quality of life and well-being that is incomplete.⁷ The model is based on peace and security, economic development, and social development or human rights. This model—which is understood internationally as development—has prevented a third world war, continues to reduce the incidence of violence around the world, and has led to higher economic growth and higher standards of living for most people. But it has come at the expense of widespread degradation of the environment and ecosystems on which development depends.

The evidence of widespread unsustainable development, both in the form of degrading ecosystems and environmental conditions around the world and in the form of enormous poverty, is abundant and credible. Humanity's predicament can be described

4. *Agenda for a Sustainable America* (John Dernbach ed., Env'tl. L. Inst. 2009).

5. Donald F. Kettl, *The Global Public Management Revolution* 79 (2d ed., Brookings Instn. Press 2005) ("To a growing degree, the work of government is done only partly by government. Government performance depends strongly on the relationship of government administration with the rest of government and of government with nongovernmental partners.").

6. The comprehensive climate change legislation that Congress will enact in the next several years will be a huge moment in American law. Richard J. Lazarus, *Ulysses, the Sirens of Politics, and Climate Change: Binding the Present to Liberate the Future*, 94 Cornell L. Rev. ____ (forthcoming 2009) (draft available at <http://sallan.org/pdf-docs/Lazarus-Ulysses-the-Sirens-of-Politics-and-Climate-Change.pdf>). My point here is to focus on the broader set of sustainability questions within which climate change legislation is located.

7. This section is drawn from John C. Dernbach, *Sustainable Development as a Framework for National Governance*, 49 Case W. Res. L. Rev. 1, 14–16 (1998).

in terms of an approaching bottleneck. The world's population is likely to grow by about three billion in the next half century,⁸ and the world's economy is projected to grow by four to five times its present size in the same period.⁹ Yet with today's population and today's economy, the overall condition of the world's ecosystems—on which human life and well-being depends—is worsening. In addition, the 2.6 billion people (40 percent of the world's population) who now live on less than two dollars per day¹⁰ should have an opportunity to improve their lives.

Sustainable development would have us achieve environmental protection and restoration at the same time as we achieve development goals. Environmental protection and restoration would not be in lieu of those goals; they would accompany them. The core factual premise of sustainable development is that environmental degradation undermines or limits economic development, social well-being, and security. Similarly, actions that improve environmental quality can also foster economic growth, social development, peace, and security.

While this is true at the international level, it is also true of the United States. In Agenda 21,¹¹ the global plan of action for sustainable development adopted at the 1992 Earth Summit and the set of principles, known as the Rio Declaration,¹² that was intended to guide this effort, individual countries agreed to work toward sustainability within their own borders and as part of their international activities. In fact, the primary task of achieving sustainable development was placed in the hands of national governments.

Still, sustainable development is different in kind from other governance challenges we have faced. In fact, sustainable development requires different forms of governance. To make sense of this, it is first necessary to review U.S. actions in recent years through the lens of sustainable development.

B. *What the United States Needs to Do*

In *Agenda for a Sustainable America*, 41 experts from various fields evaluate U.S. actions since 2002 in light of the principles and objectives of sustainable development and make recommendations for the next five to ten years. The book's 31 chapters cover a wide variety of topics—consumption, population, and poverty; international trade, finance, and development assistance; conservation and management of natural resources; waste and toxic chemicals; nongovernmental actors; education; and governance.

A synthesis of all of the chapters shows that the United States is generally moving in the wrong direction on a variety of issues.¹³ For example, the United States has an

8. U.S. Census Bureau, *International Data Base*, <http://www.census.gov/ipc/www/idb/worldpop.html> (last updated Dec. 15, 2008) (projecting the 2050 population to be approximately 9.5 billion).

9. Bd. on Sustainable Dev., *Our Common Journey: A Transition toward Sustainability* 70 (Nat'l. Acad. Press 1999).

10. UN Dev. Programme, *Human Dev. Report 2007/2008: Fighting Climate Change* 25 (Palgrave Macmillan 2007).

11. UN CONF. on Env. & Dev., Agenda 21 U.N. Doc. A/CONF.151/26 (1992) (available at <http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21toc.htm>).

12. Rio Declaration on Environment and Development, UN Doc. A/CONF.151/26, 31 I.L.M. 874 (1992) (available at <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>).

13. *Agenda for a Sustainable America*, *supra* n. 4, at 15–25.

enormous ecological footprint. Although the United States has less than five percent of the world's population, our economy accounts for more than 28 percent of the world's production of goods and services. The United States leads the world in the use of natural resources and, in most cases, in the use of natural resources per capita, including fossil fuels and materials. None of this is particularly surprising.

But what may be surprising is the good news:

- The United States is reaching a point where most decision makers understand issues within a sustainability framework and understand why that perspective is both attractive and necessary.¹⁴

- The number of governmental and nongovernmental organizations engaged in sustainable development activities has greatly increased since 2002. "Their activities are increasing in confidence and sophistication, they are achieving positive and attractive results, and these results are encouraging others to imitate and improve on what they have accomplished."¹⁵

- Climate change is an important driver for sustainability for many decision makers in corporations, local governments, educational institutions, and religious organizations. Climate change is a much more important driver for these decision makers now than it was prior to 2002.¹⁶

- In at least six areas of American life, more progress has been made than in most other areas. These are local governance, brownfields redevelopment, business and industry, colleges and universities, kindergarten through 12th grade education, and religious organizations.¹⁷

The contributing authors also made recommendations for steps toward sustainability that could be taken in the immediate future. While they made more than 100 separate recommendations, these recommendations can be grouped into ten categories:¹⁸

1. The United States should systematically reduce its ecological footprint.
2. The United States government must adopt, as soon as possible, greenhouse gas emission reduction programs that will reduce U.S. emissions to our fair share of safe global emissions.
3. The United States should create more employment opportunities in environmental protection and restoration as well as make it easier for unskilled and low-income persons to enter and remain in the workforce.
4. Sustainable development should be an organizing principle for all levels of government.
5. Nongovernmental actors should play a major role in achieving sustainability.
6. Individuals, families, and consumers should have more sustainable options in the decisions they make.

14. *Id.* at 15.

15. *Id.*

16. *Id.* at 16.

17. *Id.*

18. *Agenda for a Sustainable America*, *supra* n. 4, at 27–39.

7. Sustainable development should become a central part of public and formal education.
8. The United States should strengthen its laws regarding environmental and natural resources.
9. The United States needs to play an international leadership role on behalf of sustainable development.
10. The United States needs to improve the information and data available to the public to make decisions for sustainability.¹⁹

These recommendations are premised on the view that every sector of society needs to play a substantial and constructive role in a national effort to achieve sustainable development. And these recommendations are also, more significantly for purposes of this Article, directed at governance. They would have sustainable development become an organizing principle for all levels of government and adopt an ambitious legal program for reducing greenhouse gas emissions. They would also involve the national government working cooperatively and constructively with nongovernmental entities in a variety of ways. In other words, they would change national governance in profound ways that need to be reflected in our laws.

III. NATIONAL GOVERNANCE FOR SUSTAINABILITY

A. *Why Governance for Sustainability Is Different*

Governance for sustainability—in the United States and other countries—is different from governance for other issues and purposes for two reasons. First, it is directed at a huge long-term goal—moving from the current condition of unsustainable development to a future condition of sustainable development. The recommendations in *Agenda for a Sustainable America*—which include reducing the U.S. ecological footprint and seriously addressing climate change—capture the magnitude of the challenge. Second, the systematic integration of environment with development raises problem-solving issues with which we have relatively little experience.

The length of time required to achieve sustainable development, and the sheer magnitude of the changes required may be without precedent in U.S. history. According to a 1999 report by the National Research Council, *Our Common Journey*, “a successful transition toward sustainability is *possible* over the next two generations.”²⁰ Similarly, the major climate change bills in front of Congress include goals for reducing greenhouse gas emissions to specified levels by 2050.²¹ This 40–50 year time horizon does not even capture the full length of the transition period. What it captures instead is a shorter period of enormous environmental, energy, population, and institutional stresses.²² “It is over this period that serious progress in a transition toward sustainability will need to take place if interactions between the earth’s human

19. *Id.* at 27.

20. Bd. on Sustainable Dev., *supra* n. 9, at 7 (emphasis added).

21. See e.g. Sen. 2191, 110th Cong. (May 20, 2008) (as reported by Sen. Comm. on Env. & Pub. Works, Dec. 5, 2007).

22. Bd. on Sustainable Dev., *supra* n. 9, at 31.

population and life support systems are not to significantly damage both.”²³ The two-generation time frame is also within an imaginable planning and analysis horizon for individuals, governments, and other entities.²⁴ The actual length of the journey is likely to be much longer.²⁵

We have little, if any, experience with law in conceiving and carrying out multigenerational projects of this scale and achieving the specific goals that were established by government at the outset. Viewed retrospectively, several legal efforts appear to be comparable projects—moving from one state of affairs to a different and better state of affairs.²⁶ These include the transition from slavery to civil rights, the liberalization of international trade rules and the reduction of tariff barriers, the massive transfer of public land into private hands between the late eighteenth and early twentieth centuries,²⁷ and, outside the United States, the development of the European Union as a quasi-constitutional federation encompassing most European countries. But these look more like conscious projects in retrospect than they did at the outset. In all of these, it is difficult to find a conscious governmental articulation of the ultimate goal or a timeline for achieving it.²⁸ In each, earlier policies provided a foundation for later and often different policies, decision makers had different agendas at different times, and it is probably fair to say that earlier decision makers (particularly on slavery and civil rights) would not necessarily have agreed with the eventual result to which they contributed.²⁹

Although the modern era of environmental law began only in 1970, significant parts of pollution control are beginning to look like a multigenerational project. The Clean Air Act, first enacted in its current form in 1970, requires states to adopt and implement state implementation plans to attain air quality standards—levels of air pollution that are considered protective of public health—within specified time periods.³⁰ Yet the attainment of some standards has proven fiendishly difficult, particularly in metropolitan areas with many diverse air pollution sources. The air quality standard for ozone in Los Angeles will not be met until at least 2021,³¹ 51 years after the Clean Air Act was enacted. Similarly, under the 1972 Clean Water Act,³² while most surface water bodies are clean enough for basic uses like recreation, many remain

23. *Id.* at 3.

24. *Id.* (“[T]wo generations is a realistic time frame for scientific and technological analysis that can provide direction, assess plausible futures, measure success—or the lack of it—along the way, and identify levers for changing course.”).

25. Among other things, the built-in momentum for further climate change based on existing greenhouse gas emissions and concentrations will influence climate for a considerable distance into the future.

26. I am not suggesting that the efforts described in this paragraph are the only comparable efforts; these are simply used to illustrate the magnitude of the task of achieving sustainability.

27. Richard N.L. Andrews, *Managing the Environment, Managing Ourselves: A History of American Environmental Policy* 71–93 (Yale U. Press 1999).

28. The European Union can, however, be described as a product of Jean Monnet’s vision. François Duchêne, *Jean Monnet: The First Statesman of Interdependence* (W.W. Norton & Co. 1994).

29. See e.g. Andrews, *supra* n. 27, at 71 (“[I]t cannot be said that a conscious [public land disposal] policy worthy of the name existed. It was rather a series of expedient actions put into practice from time to time”) (quoting Benjamin Horace Hibbard, *A History of the Public Land Policies* 548–49 (Reprint ed., U. Wis. Press 1965)).

30. 42 U.S.C. § 7410(a)(1) (2006).

31. S. Coast Air Quality Mgt. Dist., *Board Meeting Date: June 1, 2007*, <http://www.aqmd.gov/hb/2007/June/070637a.htm> (last updated May 25, 2007).

32. 33 U.S.C. §§ 1251–1387 (2006).

widely contaminated and are not yet in compliance with water quality standards.³³ While these statutes have led to significant improvements in air and water quality, progress has been slower than expected or hoped.

The United States has considerable experience and success in maintaining policy goals over long periods of time. This is true in foreign policy (e.g., the Monroe Doctrine against foreign colonization or intervention in Latin America, containment of Communism) and domestic policy (e.g., economic development, reduction and prosecution of crime, antitrust). Most, if not all, of these policies have been supported, in varying ways, by laws and legal institutions. Yet these are less like projects and more like efforts to ensure that a continuing effort is made to guarantee that a particular thing is maintained, improved, or prevented. Few of our national goals involve a long-term project for moving from an unacceptable or less acceptable situation to an acceptable or more acceptable situation (balancing the budget may be an exception). They are not conscious efforts guided by specific long-term goals and timelines.³⁴

Presently, and by contrast, political life in the United States is organized around two-, four-, and six-year election cycles.³⁵ Yet sustainable development will not happen if every new president or congress gets to start all over again or revisit basic premises. Thus, we need to develop the capacity to set and achieve long-term objectives and to create the institutions and political ownership necessary to realize them. That suggests the need for some kind of guidance mechanism(s) to ensure continuity over time.

In addition to sustainable development's magnitude and long-term challenge, sustainable development would require the systematic integration of environmental concerns and goals into decision making. The key decision making principle in the Rio Declaration is integrated decision making; conventional development decisions by governments and private actors—for transportation projects or economic development, for example—should be based on environmental considerations and result in environmental protection.³⁶ While environmental impact statement requirements and environmental regulation give us some experience with this challenge, sustainable development raises a broader set of issues that even environmental law has not addressed—production and consumption of materials and energy, climate change, population, and other issues.³⁷

The integration of environment into decision making adds complexity to decisions, most obviously by including one more set of factors and goals that must be considered or

33. Robert W. Adler, *Freshwater: Sustaining Use by Protecting Ecosystems*, in *Agenda for a Sustainable America*, *supra* n. 4, at 205.

34. The United States also has experience with conscious short-term goal-setting under GPRA.

35. See Habiba Gitay et al., *Intrelinkages: Governance for Sustainability*, in *Global Environmental Outlook 4: Environment for Development* 361, 377 (UN Env. Programme 2007) (“The national environmental governance landscape evolved in a largely linear, sectoral fashion to provide specific services over a short- or medium-time scale, often related to electoral cycles. Such arrangements are not always well suited to respond to more complex, cross-sectoral challenges posed by sustainable development, which has a longer-term intergenerational time horizon . . .”).

36. Rio Declaration on Environment and Development, *supra* n. 12, at Principle 4 (“In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.”); John C. Dernbach, *Achieving Sustainable Development: The Centrality and Multiple Facets of Integrated Decisionmaking*, 10 *Ind. J. Global Leg. Stud.* 247, 252 (2003).

37. Arnold W. Rietze, Jr., *Environmental Policy—It is Time for a New Beginning*, 14 *Colum. J. Envtl. L.* 111, 120–21 (1989).

achieved. And, as explained below, it adds other forms of complexity. This additional complexity indicates the need for integrating mechanisms that can be understood and applied by decision makers. Put differently, this additional complexity needs to be accompanied by mechanisms that reduce the added difficulty in decision making or that at least make it manageable.³⁸

While the security, economic, social, and environmental dimensions of sustainability each embrace different ways of thinking and academic disciplines, we do not have well-developed ways of thinking and problem solving across all four dimensions.³⁹ Different academic disciplines apply varying analytical tools, world functioning assumptions, and discipline specific norms. To be sure, much work is being done to close the analytical gap; the growing use of economic accounting for nature's services⁴⁰ is an example, as is the development of "sustainability science."⁴¹ Still, no single discipline can effectively analyze what is needed for sustainability, and rigorous interdisciplinary analysis for sustainability requires tools and methodologies that do not yet exist.

To be sure, some of the complexity occurs because of the challenge of maximizing security, economic development, social well-being, and environmental protection at the same time; it is much easier to have one or perhaps two goals. Additionally, when we compare each of these, they are few common metrics apart from neoclassical or ecological economics, and even these have profound limits as common metrics. Beyond that, different disciplines suggest different criteria for evaluating the success of any particular policy—including economic efficiency, equity, effectiveness, and legitimacy. The argument that all of these criteria should be considered in evaluating policies for sustainability is appealing⁴² but also adds to the complexity of the task.

In addition, we do not have the ability to analyze the relationships among the security, environmental, social, and economic dimensions of sustainability, including unexpected nonlinear responses to particular actions.⁴³ To some degree, improved analytical ability will require reconceptualization of issues we may have regarded in static terms. Security, for example, is not just a military concept; it is also a political, economic, environmental, and social concept.⁴⁴ This has enormous consequences for

38. Jan-Peter Voss, René Kemp & Dierk Bauknecht, *Reflexive Governance: A View on an Emerging Path*, in *Reflexive Governance for Sustainable Development* 419, 431–35 (Jan-Peter Voss, Dierk Bauknecht & René Kemp eds., Edward Elgar Publ. Ltd. 2006); Eric W. Orts, *Reflexive Environmental Law*, 89 Nw. U. L. Rev. 1227, 1258 (1995) (explaining that law should not be so complex as to exceed the "cognitive limits" of decision makers).

39. Jan-Peter Voss & René Kemp, *Sustainability and Reflective Governance: Introduction*, in *Reflexive Governance for Sustainable Development*, *supra* n. 38, at 3, 10–11; W. Neil Adger et al., *Governance for Sustainability: Towards a 'Thick' Understanding of Environmental Decision Making*, 35 Env. Plan. 1095 (2003).

40. Perhaps the seminal article is Robert Costanza et al., *The Value of the World's Ecosystem Services and Natural Capital*, 387 Nature 253, 259 (1997).

41. William C. Clark, *Sustainability Science: A Room of Its Own*, 104 Procs. Natl. Acad. Sci. 1737, 1737 (2007).

42. Adger et al., *supra* n. 39, at 4–7.

43. Voss & Kemp, *supra* n. 39, at 11–12.

44. Ursula Oswald Spring & Hans Günter Brauch, *Reconceptualizing Security in the 21st Century: Conclusions for Research and Policy-Making*, in *Globalization and Environmental Challenges: Reconceptualizing Security in the 21st Century* 941, 948 (Hans Günter Brauch et al. eds., Springer 2008).

how a variety of issues are framed and analyzed.⁴⁵ While improved interdisciplinary tools might improve our understanding of technical or scientific relationships, human behavioral responses are often harder to predict. As Jared Diamond has pointed out, it is not any one problem we need to worry about; it is the relationships among those problems.⁴⁶ For example, growing use of biofuels to protect national security and reduce greenhouse gas emissions has affected food prices and reduced the amount of land set aside for conservation purposes under various federal agriculture programs. Nor is it entirely clear the circumstances under which agricultural production of biofuels has net greenhouse gas benefits. Biofuels also have the effect of linking food prices with energy prices, which has difficult-to-predict consequences.

Finally, sustainable development requires that we address certain path dependencies that have taken decades to develop and will likely take decades to overcome. For the United States, these include high consumption levels for materials, energy, water, and land, evidenced, for example, by sprawling land use patterns and dependence on the automobile for personal mobility. To prevent new and different future path dependencies that may be equally unsustainable, we need to anticipate adverse outcomes.⁴⁷ Because of the lack of a common analytical discipline to address sustainability problems and the complexity of the relationships across the various dimensions of sustainability, modeling and scenario development (rather than prediction alone) seem like appropriate approaches.

While these challenges arise in environmental law, they are broader and more systematic than those that ordinarily occur in environmental law. Environmental law tends to target a discrete set of problems, including air and water pollution, waste management and remediation, and endangered species, with a set of legal tools that are primarily regulatory. These various environmental laws are directed primarily at improving human health and environmental quality. “Environmental policy as a whole, however, includes all government actions that alter natural environmental conditions and processes, for whatever purpose and under whatever label.”⁴⁸ This includes subsidies, economic development programs, international trade, land use, taxation, and other policies and laws. Many policies have negative environmental consequences, regardless of their intent regarding the environment or their other goals. These policies are largely unaffected by environmental law. As a result, environmental law appears to represent the opening round of a much larger effort.

Therefore, sustainable development is not just another governance issue; it would transform governance in two profound ways—by looking ahead over a much longer period of time and by systematically integrating the environment into decision making.

B. Reflexive Governance for Sustainability

Reflexive law and governance is a way of simultaneously managing two disparate objectives—steadfastly working toward sustainability over a long period and adapting to

45. *Id.* at 947–48.

46. Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed* (Viking 2005).

47. Voss & Kemp, *supra* n. 39, at 12–14.

48. Andrews, *supra* n. 27, at 4.

new information, ideas, and events. Reflexive law improves the capacity of governmental institutions and other entities to learn about themselves and their actions and stimulates these institutions and entities to use this information to make appropriate changes.⁴⁹ In the context of sustainable development, reflexive law and governance can perform at least two key tasks. First, it can provide information to government agencies and institutions on the effectiveness and impacts of particular laws and policies, which can then be used to modify those laws and policies.⁵⁰ Second, it can encourage or prod nongovernmental entities, including businesses, to make their activities more sustainable, without being overly prescriptive.⁵¹ As explained in Section III below, a national legal structure would require a mix of substantive provisions and reflexive law.

Reflexive law is procedural, not substantive; “[t]he basic idea is to encourage internal self-critical reflection within institutions about their environmental performance.”⁵² For sustainable development, reflexive law can do so through the generation and public disclosure of knowledge that would help institutions make their activities responsive and adaptable to future events—by anticipating and avoiding unwanted side effects in current decision making, by the iterative development of sustainability goals, and by the development and implementation of appropriate strategies in conjunction with stakeholders.⁵³ These approaches or strategies, in turn, must be capable of informing and learning from all relevant levels of governance and all relevant governance institutions.⁵⁴

Strategic thinking and action underlies all of these, and a national strategy is particularly important. A sustainability strategy is “a navigation[] tool for identifying priority sustainability issues, prioritizing objectives, and co-ordinating the development and use of a mix of policy initiatives to meet national goals.”⁵⁵ It is directed at the achievement of specified goals or objectives; it is a process, not merely a document. It reflects the priorities and circumstances of the country that produces it.⁵⁶ This strategic process involves the development of an overall sustainability vision and objectives based on an iterative and open process; identification of the institutions and policies that will be used to achieve those objectives; adoption and implementation of the needed laws and policies; and a monitoring, learning and adaptation process that informs and perhaps

49. Sanford E. Gaines, *Reflexive Law as a Legal Paradigm for Sustainable Development*, 10 *Buff. Envtl. L.J.* 1, 22 (2002).

50. René Kemp, Saeed Parto & Robert B. Gibson, *Governance for Sustainable Development: Moving from Theory to Practice*, 8 *Intl. J. Sustainable Dev.* 12, 23–26 (2005).

51. Orts, *supra* n. 38, at 1311–13.

52. *Id.* at 1254. Reflexive law is a supplement to, not a replacement for, substantive environmental laws. Gaines, *supra* n. 49, at 24.

53. Voss & Kemp, *supra* n. 39, at 17–20.

54. Voss, Kemp & Bauknecht, *supra* n. 38, at 427–29, 435. “The most significant challenge is to ensure that multi-player governance regimes embody capacity for sustainability-oriented coordination, direction and re-direction.” Kemp, Parto & Gibson, *supra* n. 50, at 18. As noted earlier (see text accompanying n. 5), governance, rather than government, is used to connote a system of problem solving that includes government as a major actor but not necessarily the only decision maker. *Id.*

55. Darren Swanson et al., *National Strategies for Sustainable Development: Challenges, Approaches and Innovations in Strategic and Co-Ordinated Action* 41 (*Intl. Inst. Sustainable Dev. & Deutsche Gesellschaft für Technische Zusammenarbeit* 2004) (available at www.iisd.org/pdf/2004/measure_nat_strategies_sd.pdf).

56. John C. Dernbach, *National Governance*, in *Stumbling toward Sustainability*, *supra* n. 1, at 723, 724–27.

changes objectives, policies, and implementation.⁵⁷ For example, the strategic approach used in The Netherlands employs the development of a vision for sustainability, transition goals and agendas, creation and maintenance of public support, the explicit use of learning goals for policy decisions, and periodic reassessment and adaptation.⁵⁸

For sustainable development, this kind of reflexive governance is attractive for several reasons. First, it institutionalizes adaptive management by the government and nongovernmental entities. Adaptive management is a strategy for achieving natural resources protection and other goals in which decision makers and implementers are constantly monitoring and learning about the effects of their actions, correcting errors, improving their understanding, and making adjustments.⁵⁹ This is particularly important for sustainable development because of the difficult intellectual, policy, and political challenges of integrating environment into decision making.

Second, it provides mechanisms for engaging, prodding, and encouraging nongovernmental entities, including the private sector, into the broad challenge of achieving sustainable development. It is widely recognized that sustainable development requires the active participation of all sectors of society. On discrete sustainable development issues—such as climate change—it is difficult to see how the United States can achieve steep reductions without the active engagement of the public.⁶⁰

Third, while we can describe the general conditions required for sustainable development, it is not now possible to describe those conditions with much precision. While it is possible to say that such a society would have vastly lower levels of carbon dioxide emissions and a much smaller ecological footprint, the exact contours are difficult to predict with any confidence.

Finally, and perhaps most fundamentally, we need to learn how to become a sustainable society, and we can only learn by doing. It is certainly possible for governments and corporations and others to learn from the experience of others, but leaders still matter and their leadership will come with a learning curve. In fact, governance systems need to foster and support experimentation and innovation in technology, institutional design, and policymaking.⁶¹ The immense challenges of sustainable development will require regulation, to be sure; proposed federal climate change legislation provides evidence of that. But regulation will not be enough because neither Congress nor regulatory agencies can know enough, or react to changes fast enough, to require sustainability on such challenging questions as the consumption of resources.⁶²

57. Swanson, *supra* n. 55, at 5–6. Feedback mechanisms can include independent audits, special review commissions, sectoral reviews by government and relevant stakeholders, research networks, advisory councils, strategy progress reports, and public consultations. *Id.* at 25–27.

58. Kemp, Parto & Gibson, *supra* n. 50, at 24–25.

59. Kai N. Lee, *Compass and Gyroscope: Integrating Science and Politics for the Environment* 7, 9 (Is. Press 1993). See also Charles E. Lindblom, *The Policy-Making Process* (Robert A. Dahl ed., 2d ed., Prentice-Hall 1968) (describing need for incremental development of policies based on experience).

60. See John C. Dernbach, *Harnessing Individual Behavior to Address Climate Change: Options for Congress*, 26 Va. Env'tl. L.J. 107 (2008).

61. Kemp, Parto & Gibson, *supra* n. 50, at 22.

62. Orts, *supra* n. 38, at 1238. This is true whether program success is measured in terms of efficiency, effectiveness, equity, or legitimacy. All four are required for sustainable development decision-making.

IV. TOWARD A NATIONAL LEGAL STRUCTURE FOR SUSTAINABILITY

Much of what is required for national governance for sustainable development is also required for good governance in general. The components of good governance include effective governmental institutions and national laws, a favorable investment climate, informed and science-based decision making, and access to justice. What follows is a suggested list of mechanisms or tools that should be considered to provide a sound legal foundation for a national sustainable development effort.⁶³ It is informed by a growing body of interdisciplinary academic work and real-world experience with sustainable development at the national level. Still, like much else in sustainable development, this list is provisional—subject to modification based on new information and learning. My object is to provide an issues list (with suggested approaches) that could assist in providing a starting point on the hard work that needs to be done.

A. *Mandatory Strategic Process*

At the World Summit on Sustainable Development in Johannesburg in 2002, the United States and other countries agreed that nations should take “immediate steps to make progress in the formulation and elaboration of national strategies for sustainable development and begin their implementation by 2005.”⁶⁴ The Governmental Performance and Results Act of 1993 (GPRA)⁶⁵ provides a legal foundation for strategic goal setting and achievement by agencies. Still, it does not provide an explicit legal requirement or framework for integrating sustainability into agency decision making. GPRA should be amended to require a national strategic process for sustainable development.

A legally founded strategic process would address the current absence of such a process. While a variety of environmentally-related threats face the United States, including climate change, there does not appear to be any current “systematic inventory,” ranking, or analysis of these threats.⁶⁶ To be very sure, there continue to be strategies on various issues related to sustainable development, including energy policy, climate change research, and national security, but they do not reflect the kind of integrated economic, social, environmental, and security analysis required to sustain the well-being and prosperity of the country.⁶⁷

GPRA obligates federal agencies to develop and implement multi-year strategic

63. Most if not all of the suggested mechanisms would probably be statutory. It is certainly possible that statutory changes will not be sufficient to achieve appropriate governance for sustainability in the United States and that some form of constitutional change will be required.

64. UN Plan of Implementation of the World Summit on Sustainable Development, UN Doc. A/CONF.199/20, § XI(H)(162)(b) (2002) (available at www.un-documents.net/jburgpln.htm).

65. Pub. L. No. 103-62, §§ 1–11, 107 Stat. 285 (1993) (codified in various sections of U.S.C.).

66. William C. Clark, *America's National Interests in Promoting a Transition toward Sustainability* 8 (Research and Assessment Sys. for Sustainability Env. & Nat. Resources Discussion Paper 2000-27, 2000) (available at [http://ksnotes1.harvard.edu/BCSIA/sust.nsf/pubs/pub8/\\$File/2000-27.pdf](http://ksnotes1.harvard.edu/BCSIA/sust.nsf/pubs/pub8/$File/2000-27.pdf)). By contrast, considerable strategic thinking has been devoted to preventing terrorism. For an assessment of those efforts, see Donald F. Kettl, *System under Stress: Homeland Security and American Politics* (2d ed., CQ Press 2007).

67. John C. Dornbach, *National Governance: Still Stumbling toward Sustainability*, in *Agenda for a Sustainable America*, *supra* n. 4, at 479, 481–82. The United States also has a long history of strategic thinking and policy formulation in arms control. See e.g. Thomas C. Schelling, *The Strategy of Conflict* (Harv. U. Press 1963); Thomas C. Schelling & Morton H. Halperin, *Strategy and Arms Control* (Twentieth Cent. Fund 1961).

plans that include a mission statement, goals and objectives for major agency activities, a description of how those goals and objectives will be achieved, external factors that could significantly affect achievement of those goals and objectives, and a description of the program evaluation method that will be used to evaluate achievement of those goals and objectives.⁶⁸ The Act also requires each agency, as part of its annual budget submission, to prepare, and submit to the Office of Management and Budget, a performance plan. The annual performance plan is to include performance goals for the upcoming fiscal year, describe the indicators that will be used to measure their achievement, and explain how they will be achieved.⁶⁹ The annual performance plan is to be consistent with the strategic plan.⁷⁰ The overall objective is for “the Federal Government [to] plan [to] present a single cohesive picture of the annual performance goals for the fiscal year.”⁷¹ In addition, the act requires agencies to publish a report after each fiscal year comparing the agency’s performance goals for that fiscal year with what was actually achieved, evaluating successes in achieving goals, and explaining, when applicable, why the performance goals were not achieved.⁷²

GPRa is part of a global movement for achieving greater accountability, effectiveness, and efficiency in administrative agency performance.⁷³ This movement has yielded many success stories.⁷⁴ According to a 2004 evaluation of GPRa by the General Accountability Office (GAO), the act has established “a solid foundation of results-oriented [performance] planning, measurement, and reporting” for the federal government.⁷⁵ The GAO also concluded that GPRa has created a closer connection between agency objectives and the budget process and that it has provided a basis for reviewing agency objectives, activities, and results.⁷⁶

At the same time, GPRa is criticized for, among other things, oversimplifying the world of public agencies, demeaning the professionals who work in those agencies, emphasizing effectiveness at the expense of equity and efficiency, focusing on goals whose achievement can be quantified as opposed to other and less quantifiable goals, and “actually interfer[ing] with the accomplishment of work that individuals have been asked to perform.”⁷⁷ Yet even critics appear to share the basic goals of the performance movement, albeit with more modest expectations and modified requirements.⁷⁸

While GPRa may provide a foundation for a future sustainable development strategy, it would need to be amended to do so. Only six of 15 federal agencies (14

68. 5 U.S.C. § 306(a)(1)–(6) (2006).

69. 31 U.S.C. § 1115(a)(1)–(4) (2006).

70. 5 U.S.C. § 306(c).

71. Sen. Rpt. 103-58 at 27 (June 16, 1993) (reprinted in 1993 U.S.C.C.A.N 327, 353).

72. 31 U.S.C. § 1116 (a), (d)(1)–(3) (2006).

73. Kettl, *supra* n. 66; David Osborne & Peter Hutchinson, *The Price of Government: Getting the Results We Need in an Age of Permanent Fiscal Crisis* (Basic Bks. 2004).

74. Kettl, *supra* n. 66; John M. Kamensky & Albert Morales, *Managing for Results 2005* (Rowman & Littlefield 2004); Osborne & Hutchinson, *supra* n. 73.

75. U.S. Gen. Acctg. Off., *Results-Oriented Government: GPRa Has Established a Solid Foundation for Achieving Greater Results 6–7* (Mar. 2004) (available at <http://www.gao.gov/new.items/d0438.pdf>).

76. *Id.* at 100.

77. Beryl A. Radin, *Challenging the Performance Movement: Accountability, Complexity, and Democratic Values* 244 (Geo. U. Press 2006).

78. *Id.* at 244–47 (ten recommendations for improving performance management).

cabinet departments and the EPA) identify environmental protection or sustainable development as a strategic goal in their GPRA plans.⁷⁹ Many agencies have points of contact for sustainability, but interagency coordination concerning the environment is uneven.⁸⁰ While environmental regulatory agencies like the EPA receive considerable public attention, other agencies quietly disburse significant and environmentally damaging subsidies for highways, fossil fuels, agriculture, and marine fishing.⁸¹

Executive Orders have been used to foster sustainable development at the national level, but such orders have no authority outside the executive agencies to which they apply and lack the durability or effect of a statute. President Bill Clinton used an executive order to create the President's Council on Sustainable Development (PCSD), which issued a series of thoughtful reports and provided a focal point for sustainable development efforts in the United States between 1993 and 1999.⁸² When Clinton terminated the Council by executive order in 1999, however, it had neither recommended nor developed a national strategy or launched a sustainable development effort within executive agencies.⁸³

Somewhat similarly, President Bush issued an executive order in 2007 requiring that, among other things, federal agencies reduce their energy intensity (energy consumption per dollar expended) by 30 percent by fiscal year 2015, ensure that new buildings and major renovations of existing buildings conform to federal guidelines for high-performance green buildings, acquire goods and services that are energy-efficient and water-efficient, and use office paper containing 30 percent post-consumer recycled content.⁸⁴

Neither executive order begins to approach the integrated analysis and decision making across social, economic, environmental, and security spheres required for sustainable development. Because executive orders do not create binding legal duties, no basis for judicial review exists for claims that agencies have failed to comply with them. Moreover, executive orders do not have the legal durability of a statute. The Clinton Administration's termination of the PCSD and the Bush Administration's unwillingness to build or improve on the PCSD's work exemplify the challenge of using executive orders to address long-term challenges such as sustainable development.

On the issue of a mandatory sustainable development strategy, Canada provides a useful model from which to learn. It has a statute that is like GPRA but has amended the statute to require agencies to address sustainable development directly. The Canadian Auditor General Act authorizes the Auditor General not only to audit the books of federal agencies and report what finds but also to report when "satisfactory procedures

79. Dernbach, *National Governance: Still Stumbling toward Sustainability*, *supra* n. 67, 480–82.

80. See Organisation Econ. Co-Operation and Dev., *OECD Environmental Performance Reviews: United States* 147 (OECD Publ. 2005).

81. *Id.* at 130, 132–35. Doug Koplow & John Dernbach, *Federal Fossil Fuel Subsidies and Greenhouse Gas Emissions: A Case Study of Increasing Transparency for Fiscal Policy*, 26 *Annual Rev. Energy & Env.* 361, 381 (2001).

82. Dernbach, *supra* n. 56, at 730–34.

83. *Id.* at 730. State sustainable development efforts also tend to be based on executive orders, not statutes. Kirsten H. Engel & Marc L. Miller, *State Governance: Leadership on Climate Change*, in *Agenda for a Sustainable America*, *supra* n. 4, at 444–47.

84. Exec. Or. 13423, 72 *Fed. Reg.* 3919, 3919 (Jan. 26, 2007).

have not been established to measure and report the effectiveness of programs, where such procedures could appropriately and reasonably be implemented.⁸⁵ Under 1995 amendments to that act, each major department in the federal government is to prepare a sustainable development strategy and update that strategy every three years. The Commissioner of the Environment and Sustainable Development, a newly created position that reports directly to the Auditor General, is to monitor and report on departmental progress toward sustainable development.⁸⁶ Although the Canadian Act can be criticized for not requiring an overall sustainable development strategy, its virtue is in ensuring that each agency's strategic plan actually addresses sustainable development. The strategies have improved the coordination and decision making across agencies and have improved the national government's ability to address sustainable development issues (e.g., sustainable communities) that cross agency boundaries.⁸⁷ According to the Commissioner's 2006 report, many departments are on track in meeting their sustainable development commitments, and these departments tend to have effective management systems.⁸⁸

To be sure, Canada is experiencing challenges implementing this act; in October 2007, the Commissioner issued a report strongly criticizing the national government's implementation of the act.⁸⁹ Still, the legal obligation to work toward sustainable development puts that issue in front of national agencies and the public.

This experience suggests that amendments to GPRA could provide part of a legal structure for moving the U.S. toward sustainability. Congress could amend GPRA to require each agency's strategic plan—and the annual reports on its implementation—to be explicitly directed toward achieving sustainable development and to direct each agency to cooperate with others toward that end. Such an amendment would raise the profile of sustainability in agencies' GPRA planning and budgeting.

Congress should also consider requiring the development and periodic revision of a single strategic plan that both synthesizes various agency plans and identifies key sustainability issues and challenges.⁹⁰ A legal mechanism might also be appropriate to ensure that the strategy is integrated into the actual decisions of the federal government. Additionally, Congress should consider requiring, on an ongoing basis, an analysis of actual or potential threats (including environmental threats) to its interests and prioritize

85. Auditor Gen. Act, R.S.C. 1985 c. A-17, s. 7(2)(e).

86. *Id.* at s. 21.1-24.

87. Chad Nelson, *Sustainable Development: Evolution of the Canadian Approach*, 22 *Envtl. Progress* 293, 294 (Dec. 2003).

88. Off. Auditor Gen. Can., *Report of the Commissioner of the Environment and Sustainable Development to the House of Commons* ch. 4, 1-2 (Minister Pub. Works & Govt. Servs. Can. 2006).

89. Off. Can., *Report of the Commissioner of the Environment and Sustainable Development to the House of Commons* ch. 1, 22-23 (2007) (available at http://www.oag-bvg.gc.ca/internet/docs/c20071001c_e.pdf). *Id.* at ch. 1, 22-23.

90. In recommending changes to improve GPRA in 2004, GAO stated:

If fully developed, a governmentwide strategic plan can potentially provide a cohesive perspective on the long-term goals of the federal government and provide a much needed basis for fully integrating, rather than merely coordinating, a wide array of federal activities. Successful strategic planning requires the involvement of key stakeholders. Thus, it could serve as a mechanism for building consensus. Further, it could provide a vehicle for the President to articulate long-term goals and a road map for achieving them.

U.S. Gen. Acctg. Off., *supra* n. 75, at 105.

them accordingly.⁹¹ That analysis would also need to be integrated into agency strategies under GPRA as well as integrated into multi-agency strategies.⁹²

B. Policy Integration

The integrated decision making required for sustainable development involves many forms of policy integration.⁹³ Three of the most important are short-term and intergenerational goals, horizontal integration, and vertical integration.

1. Short-term and Intergenerational Goals

Substantive goals, including not only short- and medium-term goals but also long-term or intergenerational goals, are needed to make continued progress toward sustainability.⁹⁴ Substantive goals are a form of policy integration because decisions in a variety of contexts would be made to support or further those goals, or at least not be inconsistent with them. Goals provide a navigating tool or compass for adaptive management.⁹⁵ Targets and timetables (goals for achieving X thing by Y date) create public goals that focus and motivate a wide variety of governmental and nongovernmental behaviors.⁹⁶ Congress could require the development of such goals or should create such goals itself.

Narrative goals as well as goals marked by quantitative targets and timetables may both be appropriate. The overall goal of the United Kingdom's sustainable development strategy, for example, "is to ensure 'a better quality of life for everyone, now and for generations to come.'"⁹⁷ Yet quantitative targets and timetables also provide a way of measuring the success (or failure) of programs designed to achieve those goals. Proposed federal climate legislation provides an example; greenhouse gas emissions are to be reduced by specific amounts over a forty-year period.⁹⁸ Substantive goals such as these represent exactly what is being sought; they are not proxies or symbols for the desired behavior. In a system that provides feedback from implementation and new information, of course, mechanisms for adjusting specific targets and timetables will also be needed.

Of course, the legal foundation for goal setting among federal agencies is GPRA.

91. Clark, *supra* n. 66, at 8.

92. See e.g. *National Security and the Threat of Climate Change* 7 (CNA Corp. 2007) (available at <http://securityandclimate.cna.org/report/National%20Security%20and%20the%20Threat%20of%20Climate%20Change.pdf>) ("The national security consequences of climate change should be fully integrated into national security and national defense strategies.").

93. Dernbach, *supra* n. 36, at 248, 258–59. For an examination of the challenges of environmental policy integration in Europe, see *Environmental Policy Integration: Greening Sectoral Policies in Europe* (Andrea Lenschow ed., Earthscan 2002).

94. Dernbach, *supra* n. 36, at 283.

95. See Alfred Light's article in this symposium, explaining how the absence of such goals for the Florida Everglades is making restoration much more difficult. Alfred R. Light, *Beyond the Myth of Everglades Settlement: The Need for a Sustainability Jurisprudence*, 44 *Tulsa L. Rev.* 253 (2008).

96. John C. Dernbach, *Targets, Timetables and Effective Implementing Mechanisms: Necessary Building Blocks for Sustainable Development*, 27 *Wm. & Mary Envtl. L. & Policy Rev.* 79, 99–100 (2002).

97. Swanson et al., *supra* n. 55, at 8 (citing U.K. Government 1999).

98. See e.g. Sen. 2191, 110th Cong. § 1201(a)–(d) (May 20, 2008) (A bill "[t]o direct the Administrator of the Environmental Protection Agency to establish a program to decrease emissions of greenhouse gases, and for other purposes.").

The goal setting process envisioned here, however, would be different in several respects. It would include goals for a longer time frame, Congressionally established goals (as opposed to agency goals), and a great many cross-sectoral goals that apply to multiple agencies, while expressly providing for the modification of goals in response to new information.

2. Horizontal Integration

Horizontal integration is required for sustainable development; all governmental and nongovernmental decision makers operating on the same level need to be working effectively together toward the same goal.⁹⁹ This requires integration of administrative agencies and decision making at the national level, and on a range of issues that go beyond environmental regulation. Experience with national sustainable development strategies in other countries indicates that “[g]overnment spending is a key policy instrument for implementing and influencing sustainable development.”¹⁰⁰ As a result, horizontal integration of federal agencies with the government’s fiscal planning and budgeting system is especially important.¹⁰¹ In the United States, the most obvious choice (but perhaps not the best) is the Office of Management and Budget, which manages and controls the budgets of the federal agencies and publishes the President’s annual proposed budget. Substantive goals, administered and applied through an amended GPRA, would likely help achieve that integration.

The great variety of U.S. administrative agencies and decision makers suggests the need for additional decision making criteria or principles that would be used by all agencies and decision makers.¹⁰² As in Canada, sustainable development by itself might be such a principle. Another set of choices is provided by the sustainable development principles contained in the Rio Declaration. Among these are two principles that are already firmly established in U.S. law. The first is the National Environmental Policy Act’s requirement that federal agencies prepare an environmental impact assessment prior to making a decision that may significantly affect the quality of the human environment.¹⁰³ The second principle requires citizen participation in environmental decision making.¹⁰⁴ However imperfect, these requirements apply to all agencies and establish procedural limits on their activities. Each of these is also an example of reflexive law. Environmental impact statements mean that agencies must consider environmental and social consequences of major decisions before they make them.¹⁰⁵ Public participation in governmental decision making influences proposed decisions

99. *See id.* at § 2405(b)(2)–(3).

100. Swanson & Pintér, *supra* n. 3, at 46.

101. *Id.*

102. Kemp, Parto & Gibson, *supra* n. 45, at 20–21.

103. 42 U.S.C. § 4332(C) (2006). In preparing such statements, NEPA requires agencies to propose any changes necessary to their existing statutory authority to harmonize their activities with the purposes of the act. *Id.* at § 4333. The Swiss government is making use of sustainability impact assessments, rather than environmental impact statements. Swanson et al., *supra* n. 50, at 17.

104. Rio Declaration on Environment and Development, *supra* n. 12.

105. Orts, *supra* n. 33, at 1272–73. Somewhat similarly, the development and public disclosure of corporate environmental management strategies should strongly influence corporate environmental behavior. *Id.* at 1311–13.

before they are even submitted to the public and yields information and ideas that influence final decisions.¹⁰⁶

Other Rio principles might also be established by statute as decision making principles or criteria. These principles include reduction of unsustainable production and consumption patterns,¹⁰⁷ a precautionary approach (the lack of complete scientific certainty on environmental matters should not be used as an excuse for delaying action),¹⁰⁸ and intergenerational equity.¹⁰⁹ By turning these principles into considerations or criteria in decision making, Congress could force government policy makers to analyze and consider the impact of their actions, monitor these impacts, devise mechanisms for adhering to these principles more fully, and make their thinking and analysis publicly available. These principles, in other words, could be used on a reflexive basis to move government decisions in a more sustainable direction.

3. Vertical Integration

Vertical integration is also needed; federal, state, and local governments all need to be working together in mutually reinforcing ways toward the same goals.¹¹⁰ Similarly, national government efforts need to be supportive of international goals, particularly (though not exclusively) when those goals are contained in treaties to which the nation is a party.¹¹¹

That suggests the importance of two statutory approaches. The first approach would provide a variety of federal incentives to guide and coordinate state and local sustainable development efforts.¹¹² Congress also needs to ensure continued state and local experimentation in sustainable development policy making.¹¹³ The second approach would involve U.S. participation in, ratification of, and statutory authority for implementation of a variety of international agreements related to sustainable development.

Congress could provide support or encourage state and local sustainability efforts by providing funding (or additional funding) to such efforts or by conditioning the receipt of funding on such efforts. These sustainability efforts should include the development and implementation of state sustainable development strategies as well as the use of sustainable development indicators.¹¹⁴ Federal incentives for smart sustainability policies are needed in a cross-section of areas, "including climate change, transportation, housing, education, energy efficiency, infrastructure reinvestment,

106. See *infra* Section IV(B).

107. Rio Declaration on Environment and Development, *supra* n. 12, at Principle 8.

108. *Id.* at Principle 15.

109. *Id.* at Principle 3.

110. Dernbach, *supra* n. 31, at 279–80.

111. There is a rich literature on international environmental governance. See e.g. *Emerging Forces in Environmental Governance* (Norichika Kanie & Peter M. Haas eds., UN U. Press 2004).

112. Swanson & Pintér, *supra* n. 3, at 52.

113. *Id.* at 58 ("Because all development is essentially local, feedback from local to national levels is fundamental. At the same time, cumulative impacts from unsustainable development may not be detectable at one local point, resulting in a need for feedback from national to local levels as well.")

114. Engel & Miller, *supra* n. 83, at 453.

immigration, environment, land use, pollution prevention, and regional coordination.”¹¹⁵ For example, Congress should use “conditional funding mechanisms [to] provide incentives” for municipal cooperation in metropolitan areas with many municipalities regarding such issues as water resources and affordable housing.¹¹⁶ Similarly, Congress could encourage states to adopt strong smart-growth laws.¹¹⁷

In addition, Congress should provide a significant role for the state and local governments in national sustainable development efforts. Climate change provides an example. Many state and local governments are already engaged in reducing greenhouse gas emissions because they see climate change mitigation as in their best interest. This engagement has provided an impetus for national legislation, has yielded early and positive (if thus far modest) results in reducing greenhouse gas emissions, and provides opportunities for policy experimentation. Continuing and enhancing this engagement should be a major objective of comprehensive national climate change legislation. Of course, some emissions are best achieved by nationally applicable rules. But some reductions are best achieved by mechanisms within the primary jurisdiction of the states—land use, building codes, local transportation, and utility regulation. Others will be achieved by states adopting more stringent standards than nationally applicable ones, as California and other states have already done in the case of mobile source emissions standards.¹¹⁸ Furthermore, in modifying the Clean Air Act, Congress could maximize the states’ achieved emissions reductions by modifying the State Implementation Plan process for greenhouse gases to focus on tons of emissions, instead of on ambient concentrations, and using that process to achieve minimum specified levels of reductions.¹¹⁹

Congress also needs to avoid preempting state sustainability efforts to the greatest degree possible.¹²⁰ A standard feature of environmental law, for instance, is express authorization to states to adopt more stringent regulations for protecting and improving air and water quality.¹²¹ Somewhat similarly, in climate change legislation, Congress should “avoid[] federal preemption of state . . . initiatives except [in the context of] a direct conflict” with a federal requirement.¹²²

Finally, continued and enhanced international legal integration is also essential. The recent willingness of the U.S. to participate in negotiations for a post-Kyoto Protocol is a good sign. Yet there are a great many treaties that the United States has not yet ratified and should ratify. For example, the United States should ratify the Convention on Biological Diversity. “[R]atification [would] establish biodiversity conservation as an

115. *Agenda for a Sustainable America*, in *Agenda for a Sustainable America*, *supra* n. 4, at 30.

116. Jonathan D. Weiss, *Local Governance and Sustainability: Major Progress, Significant Challenges*, in *Agenda for a Sustainable America*, *supra* n. 4, at 51.

117. *Id.* at 52.

118. Robert B. McKinstry, Jr., John C. Dembach & Thomas D. Peterson, *Federal Climate Change Legislation as If the States Matter*, 22 *Nat. Resources & Env.* 3, 4 (Winter 2008).

119. *Id.* at 8.

120. See Barry Rabe, *Environmental Policy and the Bush Era: The Collision between the Administrative Presidency and State Experimentation*, 37 *Publis: J. of Federalism* 413 (2007) (explaining that the Bush Administration more or less abandoned the practice of working collaboratively with states on environmental matters, including (but not limited to) climate change).

121. See e.g. 33 U.S.C. § 1370 (Clean Water Act); 42 U.S.C. § 7416 (2006) (Clean Air Act).

122. Engel & Miller, *supra* n. 83, at 449.

official overarching legal objective in the United States and stimulate the development of a comprehensive national biodiversity conservation strategy.”¹²³ In addition, the United States should ratify such treaties as the Stockholm Convention on Persistent Organic Pollutants, the Rotterdam Convention on Prior Informed Consent, and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes.¹²⁴

C. Public Education and Engagement

Public education and engagement are necessary parts of any national effort to achieve sustainable development. Too much work is needed on too many fronts for the federal government to do it alone. The national government should lead, support, and encourage, in a variety of contexts, sustainable development efforts by individuals, nongovernmental organizations, and corporations, while providing or requiring the necessary information to support those efforts.¹²⁵ Growing public interest in, and awareness of, sustainable development provides reason to believe that substantial segments of the public and affected interests would respond positively.

According to the Rio Declaration, nations are to “facilitate and encourage public awareness and participation” in sustainable development efforts “by making information widely available.”¹²⁶ Public education is important not only to build a greater sense of personal responsibility but also to achieve the kind of public understanding of, and debate about, sustainable development that is necessary in a democratic society. Public participation provides the basis for the development of a consensus on key issues, introduces new perspectives and information to the decision making process, and provides the basis for public and stakeholder “ownership” of a strategy that will enable it to succeed.¹²⁷ The integrated decision making required for sustainable development is so complex, moreover, that no single group or individual is likely to grasp the great variety of required perspectives.¹²⁸ Public participation generates better decisions and adds legitimacy to those decisions.

An essential part of any public education effort is developing indicators on security, environment, economy, and social well-being, and using them to inform the public about progress toward goals.¹²⁹ Indicators quantitatively measure various human activities and natural events; in other contexts, they have “enhanced collaboration to address public issues, provided tools to encourage progress, helped inform decision making and improve research, and increased public knowledge about key economic, environmental, and social and cultural issues.”¹³⁰ Sustainable development indicators

123. A. Dan Tarlock & Andrew Zabel, *Biodiversity Conservation: An Unrealized Aspiration*, in *Agenda for a Sustainable America*, *supra* n. 4, at 278.

124. *Agenda for a Sustainable America*, *supra* n. 4, at 38.

125. “Government alone has the broadest reach across society, and only government can provide both the information necessary and the ability to align incentives that will make the ensuing dialogue meaningful and actionable.” Gary M. Rahl, *The Critical Enabler*, *strategy+business* 2, 8 (Summer 2008).

126. Rio Declaration on Environment and Development, *supra* n. 12.

127. Organisation Econ. Co-Operation and Dev., *Strategies for Sustainable Development: Practical Guidance for Development Co-Operation* 29–35 (OECD Publ. 2001).

128. Swanson & Pintér, *supra* n. 3, at 48.

129. Dembach, *supra* n. 56, at 727–28.

130. U.S. Govt. Accountability Off., *Informing Our Nation: Improving How to Understand and Assess the*

also shed light on the relationships among various trends, enable decisions to be based on integrated data, and provide a data platform for moving toward sustainability.¹³¹ In addition, indicators can provide a way of discerning new and even unexpected developments.¹³² If coupled with goals, indicators can also provide incentives to a wide variety of governmental and nongovernmental actors.¹³³ A robust system of sustainable development indicators, in other words, will help provide the kind of information required for reflexive governance.¹³⁴

The EPA has moved toward a system of public environmental reports, with a 2003 *Draft Report on the Environment*¹³⁵ and a 2008 *Report on the Environment*,¹³⁶ both of which describe environmental and human health trends in quantitative terms and identify major knowledge gaps. These reports are a step forward; the United States has not had any comparable reporting since Congress ended the Council on Environmental Quality's responsibility to publish such reports.¹³⁷ But these reports generally are limited to environmental indicators; they do not include the kind of social, economic, and other data that is needed. By contrast, an interactive, web-based set of key social, economic, and environmental indicators is being developed by State of the USA (SUSA), a nonprofit organization advised by the National Academy of Sciences, which itself has published several major reports on environmental indicators.¹³⁸

The federal government should develop its own set of sustainable development indicators that cover the environmental, social, economic, and security aspects of national life.¹³⁹ While the SUSA project would be an important supplement to this work—and provide an independent check on the government's own efforts—national indicators developed by the federal government could more readily be tied to national and agency strategic plans and goals. These indicators would provide a broader and more accurate assessment of national well-being than is achieved with agency-by-agency or

USA's Position and Progress 14 (Nov. 2004) (available at <http://www.gao.gov/new.items/d051.pdf>).

131. Bd. on Sustainable Dev., *supra* n. 9, at 258–65.

132. Swanson et al., *supra* n. 55, at 37 (indicators “allow analysis of the inherent trade-offs and interlinkages between the economic, social and environmental dimensions of sustainable development”).

133. Kemp, Parto & Gibson, *supra* n. 50, at 21–22.

134. Quantitative indicators, of course, are unhelpful for matters on which only qualitative indicators are appropriate or available. In addition, indicators do not explain why something happened or what should be done about it.

135. EPA, *Draft Report on the Environment 2003* (2003) (available at http://www.epa.gov/Envindicators/roe/pdf/EPA_Draft_ROE.pdf).

136. EPA, *EPA's 2008 Report on the Environment: Highlights of National Trends* (2008) (available at http://www.epa.gov/roehd/pdf/roe_hd_layout_508.pdf).

137. Pub. L. No. 104-66, § 3003, 109 Stat. 707 (1995), set out as a note under 31 U.S.C. § 1113 (2006) (repealing 42 U.S.C. § 4341 (1994)).

138. St. of the USA, *Introduction to the State of the USA*, <http://stateoftheusa.org/ourwork/introduction.asp> (accessed Apr. 2, 2009). SUSA will not set national goals or assess progress in meeting them; rather, it aspires to “provide easy access to credible, reliable information as well as a forum that allows Americans to engage on the issues that matter.” *Id.* The National Academy of Sciences has produced several reports on indicators. See e.g. Natl. Research Council, *Ecological Indicators for the Nation* (Natl. Acad. Press 2000); Natl. Research Council, *Nature's Numbers: Expanding the National Economic Accounts to Include the Environment* (William D. Nordhaus & Edward C. Kockelenberg eds., Natl. Acad. Press 1999).

139. This effort would likely build on the work of an interagency group that has worked on sustainable development indicators. U.S. Interagency Working Group on Sustainable Development in the United States, *Sustainable Development in the United States: An Experimental Set of Indicators* (1998). These indicators, taken together, could function as a supplement to Gross Domestic Product (GDP) as a measure of the nation's health and well-being.

statute-by-statute reporting.¹⁴⁰ This kind of comprehensive reporting will also improve the federal government's capability to effectively and deeply integrate national decision making concerning the economic, social, environmental, and security aspects of problems.

Additional statutory information gathering requirements may also be needed. While regulations and subsidies have the same types of environmental, social, and economic effects, for instance, we have considerable institutional ability to evaluate the effects of regulations before they are adopted and almost none for subsidies.¹⁴¹ Comparable public disclosure and reporting requirements for subsidies would enable the public as well as decision makers to understand the effects of such subsidies and would enable better integration of decisions involving regulations and subsidies.¹⁴² Corporate reporting of progress toward sustainability goals may also be appropriate, along with public disclosure of those reports.

Issue-specific public information is also essential to ensure public understanding and as a foundation for nongovernmental efforts on behalf of public goals. In the context of climate change legislation, public information would include reported emissions, consumer information on the energy use or greenhouse gas emissions associated with the use of particular products, information that would allow users of existing products to compare the greenhouse gas emissions or energy use impacts of those products with those of other available consumer products, and information on climate change effects.¹⁴³

In addition to public information, broad public participation is required for the development and implementation of a strategy.¹⁴⁴ Mechanisms for institutionalizing public participation include multi-stakeholder national councils for sustainable development, cross-sectoral councils or networks, independent advisory bodies, place-based stakeholder consultations, and a variety of ad hoc processes.¹⁴⁵ Congress would need to provide specifically for some form(s) of public participation. Unlike GPRA strategic plans, for instance, a national sustainable development strategy would need to be developed in a way that considered the views of all stakeholders, including Congress and the public.¹⁴⁶

Beyond public participation in the development and implementation of a strategy, Congress needs to consider ways of allowing and encouraging individuals—in their roles as citizens and as consumers—to participate in the actual effort to achieve sustainability. Once again, climate change provides an example. Most of the comprehensive climate change bills now before Congress would amend the Clean Air Act, which has extensive

140. Ltr. from David M. Walker, Comptroller Gen. of the U.S., to Sam Brownback, Chairman Subcommittee Com., Sci. & Transp. (Nov. 10, 2004), in U.S. Govt. Accountability Off., *supra* n. 130, at 2.

141. See Koplow & Dernbach, *supra* n. 87.

142. See *id.*

143. Dernbach, *supra* n. 60, at 144–52.

144. Rio Declaration on Environment and Development, *supra* n. 12; Swanson et al., *supra* n. 55, at 42 (“A truly national strategy will have in place a participation approach that obtains the collective feedback of all stakeholders in the country.”).

145. Swanson et al., *supra* n. 55, at 33–34.

146. Alfred Ho, *GPRA after a Decade: Lessons from the Government Performance and Results Act and Related Federal Reforms*, 30 Pub. Performance & Mgt. Rev. 307, 310 (2007).

citizen participation provisions, including authorization for citizen suits. The applicability of these provisions to climate change would help ensure that the government and regulated entities comply with the Act, provide a continuous flow of information and ideas to EPA, and help keep the government and regulated entities on a continued course of progressive greenhouse gas reductions.

It is also important to engage individuals as consumers. Activities “that are under the direct, substantial control of the individual and that are not undertaken in the scope of the individual’s employment,” are responsible for about one-third of U.S. greenhouse gas emissions and eight percent of global greenhouse gas emissions.¹⁴⁷ Engaging individuals as consumers could make it more likely that the goals of climate change legislation would be achieved and would create a strong grass-roots level of political support for that legislation. Available legal mechanisms include tax incentives, the distribution of allowances (each of which authorizes the emission of one ton of carbon dioxide, and which have obvious economic value), the ability to generate and trade allowances, and distribution of proceeds from the sale of allowances.¹⁴⁸ Because individuals also belong to families and organizations, and are employees, supervisors, or managers in their workplace, the effect of these mechanisms would likely go beyond their personal lives.

In addition to engaging individuals, the federal government also needs to find additional ways to engage the private sector on behalf of sustainable development. At the World Summit on Sustainable Development in 2002, the United States played a major role in encouraging the use of partnerships between government and private-sector actors to help meet sustainable development objectives.¹⁴⁹ A number of such partnerships have grown in importance in recent years, including Energy Star, a voluntary labeling program for energy efficiency in more than 50 product categories that involves more than 12,000 public and private entities.¹⁵⁰ A significant but not insurmountable challenge in such partnerships, of course, is ensuring that the results they claim are credible.¹⁵¹ More broadly, government support for “Self-Policing” and “Self-Disclos[ure]” of corporate sustainability would fit the model of reflexive regulation.¹⁵²

147. Michael P. Vandenberg & Anne C. Steinemann, *The Carbon-Neutral Individual*, 82 N.Y.U. L. Rev. 1673, 1690 (2007).

148. Dermbach, *supra* n. 60, at 152–55. Because the number of total available allowances decreases over time, the allowances will likely become more valuable as time passes. In addition, their diminishing number means that making them available to individuals does not offset the greenhouse gas emission reductions that individuals may have achieved.

149. See Liliana B. Andonova & Marc A. Levy, *Franchising Global Governance: Making Sense of the Johannesburg Type II Partnerships*, in *Y.B. of Intl. Co-Operation Env. and Dev.* 19 (Olav Schram Stokke and Øystein B. Thommessen eds., 2003/2004).

150. EPA, *History of Energy Star*, http://www.energystar.gov/index.cfm?c=about.ab_history (accessed Apr. 2, 2009).

151. See *Energy Star Has Lost Some Luster: The Program Saves Energy but Hasn't Kept with the Times*, Consumer Reports 24, 26 (Oct. 2008) (available <http://www.legis.state.ia.us/lisadocs/IntComHand/2009/IHRSN008.PDF>) (explaining that test procedures and standards need to conform to the standards available for other products and that independent evaluation of energy saving claims should be conducted).

152. Orts, *supra* n. 38, at 1277.

D. *Broad Range of Legal and Policy Tools*

A great variety of additional legal and policy tools will be needed to achieve sustainable development in the United States. The basic point is that we need to be pragmatic about what works and recognize the potential of many tools. The tools described above, including GPRA, are illustrative of this variety. While an inventory of these tools is beyond the scope of this Article, three guiding principles may be of considerable help in understanding their potential scope.

First, we need to address the reality that many laws have negative environmental effects. These laws, which include tax laws that encourage sprawl, statutory loopholes for environmentally damaging activities, electric utility regulations that reward greater electricity consumption with greater financial returns, and a variety of subsidies, can fairly be described as anti-environmental law or as comprising the law of unsustainable development. This category of law is both large and unmapped. Identifying, and then modifying or eliminating these laws, will not be easy, but it is an essential task.¹⁵³

Second, we need to make much greater use of economic tools. These include market instruments, instruments that affect producer and consumer behavior, and instruments that affect the workings of government.¹⁵⁴ While environmental fiscal reform—in the form of pollution taxes that replace labor and income taxes, the reduction or elimination of subsidies, and the like—could be very helpful in moving toward sustainable development, few nations have made much use of it.¹⁵⁵ The use of economic tools would enable the United States to more fully integrate environmental objectives with social, economic, and security objectives. The federal government should, for example, make greater use of environmentally related taxes in a variety of contexts.

Third, we need to adopt new legislation to address pressing issues, especially climate change. These laws, in turn, will need to address the same broad issue that is being discussed here—achieving the right mix of continued progress and adaptation to new information. Congress could help navigate this effort with legal mechanisms that promote agency autonomy, enhance or reduce the influence of particular interest groups, and maintain and even accelerate the implementation process.¹⁵⁶ These legal mechanisms, in turn, might be considered in other legislation on specific issues or on sustainable development in general.

E. *Governmental Implementing/Coordinating and Evaluation Entities*

Unless a single governmental entity is charged by law with the responsibility for directing and coordinating this effort, it is not likely to be done effectively.¹⁵⁷ In fact, the placement of governmental responsibility may be the most important of all

153. Bd. on Sustainable Dev., *supra* n. 9, at 216. See also Organisation for Econ. Co-Operation and Dev., *Subsidy Reform and Sustainable Development: Political Economy Aspects* (OECD Publ. 2007).

154. Swanson et al., *supra* n. 55, at 19–22.

155. *Id.* at x–xi.

156. Lazarus, *supra* n. 6.

157. Dernbach, *National Governance*, *supra* n. 56, at 727.

governance issues for sustainability.¹⁵⁸ Experience of other countries to date indicates that placement of coordination or overall management responsibility with *some* entity is needed and that the most effective approach involves “an office or department with a cross-cutting function [having] legitimacy across government.”¹⁵⁹ A nation’s environmental agency is not ordinarily the most effective choice.¹⁶⁰

Several options are available. While the EPA is under the direct control of the President, it does not have administrative authority over the entire executive branch, and it is already entrusted with significant statutory responsibilities to administer a variety of existing programs. The Council on Environmental Quality (CEQ), by contrast, is located in the executive office of the president and has cross-cutting responsibilities. It is required by statute “to develop and recommend to the President national policies to foster and promote the improvement of environmental quality to meet the conservation, social, economic, health, and other requirements and goals of the Nation.”¹⁶¹ Although NEPA, the statute that created CEQ, was adopted in 1969, the language is much in keeping with sustainable development. To make CEQ work as a managing or coordinating entity, however, it would need to be given much greater statutory authority than it already possesses.

Another choice would be to lodge responsibility with the Office of Management and Budget. An advantage in choosing OMB in particular is that OMB already has considerable responsibility for administering the GPRA process. This entity would need to coordinate or manage the development, implementation, and periodic revision of the strategy, including priorities established in the strategy. It would also need to be responsible for developing or proposing goals, for coordinating agency GPRA strategies in light of sustainable development objectives and principles, and for monitoring the accomplishment of particular goals. In addition, this entity would provide much of the federal government’s analytical capacity for sustainable development, for building scenarios, and for authoritatively reporting to the public on national progress on sustainable development. All of this builds on, and extends, OMB’s existing statutory responsibilities.

A third option is an independent agency—an agency that is not under control of the executive branch. This option would be more consistent with the long-term nature of the sustainable development objective because the agency would be relatively insulated from election cycles. Still, it would be necessary to find a way to link this agency’s work with executive agency activities under GPRA.

Beyond that, reporting and informational requirements need to be designed to maximize what can be learned from specific efforts. At all levels of government, and particularly at the state and local level, decision makers need to make their goals and assumptions clear, laws should require public ongoing reporting on “the success or failure

158. Swanson & Pintér, *supra* n. 3, at 42. A recent study of U.S. intelligence agencies sums up its conclusions in two words: “Organization matters.” Amy B. Zegart, *Spying Blind: The CIA, the FBI, and the Origins of 9/11* 196 (Princeton U. Press 2007).

159. Swanson & Pintér, *supra* n. 3, at 57.

160. *Id.* at 44.

161. 42 U.S.C. § 4344 (2006).

of their efforts,¹⁶² and decision makers should “share their conclusions in ways that actors in other jurisdictions can access and understand.”¹⁶³ Because the stakes are so high and the scope of required activity is so broad and deep, the journey toward a sustainable America will require that more conscious learning efforts be designed into the programs themselves.

A separate entity that is independent of executive branch control should be responsible for evaluating and monitoring. Most governmental efforts involve a learning curve in which the government, private sector, nongovernmental organizations, and others modify their programs and activities in response to new information and developments. It is also common for government programs to have both internal and external evaluation mechanisms. These will be especially important for national sustainable development efforts. Studies of national sustainable development strategies around the world demonstrate that “nations are clearly in a period of experimentation with regard to the preparation and implementation” of those strategies.¹⁶⁴

This independent entity should evaluate and monitor the national effort, including the national strategy, and recommend improvements.¹⁶⁵ “The central monitoring and evaluation requirement is to track systematically the key variables and processes over time and space and see how they change as a result of strategy activities.”¹⁶⁶ This entity should also be responsible for assessing the various costs of developing and implementing a strategy as well as the tangible economic, social, environmental, and security benefits of the strategy.¹⁶⁷ Of course, GPRA comes with its own feedback and learning processes, and an independent evaluating entity would not prevent the executive branch agency from using those processes. But an independent mechanism (like Canada’s Commissioner of the Environment and Sustainable Development) would enhance the likelihood of substantial progress toward sustainability by providing an additional source of accountability.¹⁶⁸ Similarly, in national climate change legislation, Congress should consider requiring a periodic report by an independent entity or outside experts on the effectiveness of U.S. laws affecting climate change, including recommendations on how to further reduce emissions.

162. *Agenda for a Sustainable America*, *supra* n. 115, at 31.

163. Engel & Miller, *supra* n. 83, at 453.

164. Swanson & Pinter, *supra* n. 3, at 35.

165. Clive George & Colin Kirkpatrick, *Approaches for Evaluating National Sustainable Development Strategies*, in Organisation. for Econ. Cooperation & Dev., *supra* n. 3, at 138.

166. Barry Dalal-Clayton & Steve Bass, *Monitoring and Reviewing National Sustainable Development Strategies*, in Organisation. for Econ. Cooperation & Dev., *supra* n. 3, at 124 (citation omitted).

167. George & Kirkpatrick, *supra* n. 166, at 137–38. At least four different evaluation mechanisms are available—budgetary reviews, reviews of quantitative targets or goals, impact assessments (including social and economic impacts as well as environmental impacts), and national audits. *Id.* at 140–48. Each has different strengths and weaknesses, and a combination of all four is probably needed for a complete evaluation. *Id.* at 150–52.

168. Congress should consider establishing an Office of Sustainability Assessment to advise it on matters relating to sustainable development. Dernbach, *supra* n. 67, at 487–88. Such an office would give Congress the ability to independently evaluate executive branch information and assessments concerning sustainability, to develop more effective legislative proposals, and to identify future sustainability issues that need to be addressed.

V. CONCLUSION

Any serious effort to approach sustainable development in the United States will require changes in law and governance that borrow from, but which are different in kind than, the challenges we have addressed through environmental law. Sustainable development's economy-wide multigenerational quality is more like that of proposed federal climate change legislation—and it is even broader and more complex than climate change.

Because achieving sustainable development is both necessary and a significant learning experience, we will need to employ a form of governance—reflexive governance—that requires constant learning and supportive citizens and stakeholders who are working to ensure sustainability in their own activities. The long-term quality of the challenge, coupled with the need for across-the-board integration of environmental considerations into decision-making, are both daunting.

While we only have minimal experience with a legal structure for this effort, we can, in fact, work from our own national experience with environmental law as well as from the experience of individual U.S. states and other nations. The legal structure needed by the U.S. includes a required national strategy, substantive long-term and short-term goals, better integration of environment into decision making across and among various levels of government, public education and engagement, a broad range of legal and policy tools, feedback mechanisms to foster learning, and designated governmental entities for coordinating or managing this effort. The structure also includes an independent review of their efforts.

It is, of course, possible that these mechanisms will not be enough to address the challenges ahead, and that deeper changes in our system of governance will be required. But we cannot wait for perfect information about the best legal approach to achieving sustainable development. We need to start now.