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MOVING GOVERNMENT DECISIONMAKING Into the Information Age

Knowledge will forever govern ignorance, and a people who mean to be their own governors, must arm themselves with the power knowledge gives.

—JAMES MADISON, 1822

Three decades of strong public health and safety laws have resulted in tremendous gains: Our air and water are cleaner; our food, workplaces, and roads are safer; and corporations and government are more open and accountable to the public. These improvements have saved thousands upon thousands of lives and raised the quality of life for all Americans—while our industry and economy have thrived.

Nonetheless, numerous significant health, safety, and environmental problems remain. For instance, every year more than 40,000 people die on our nation's highways,¹ while power-plant pollution causes an estimated 24,000 premature deaths.² Foodborne illnesses kill 5,000 and sicken 76 million annually.³ Nearly 6,000 workers die as a result of injury on the job, with an additional 50,000 to 60,000 killed by occupational disease.⁴ And major new global challenges such as climate change, exposure to multiple chemical pollutants, and rapid deterioration of ocean habitats require urgent attention.⁵

Our ability to address these problems could be greatly enhanced through better information. Currently, there are large unanswered questions that make effective policymaking more difficult. What environmental contaminants are acutely dangerous to children? How does the

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interaction of multiple toxic substances affect human health? What neighborhoods are most imperiled by polluted air and water? What is the air quality inside American workplaces and industrial facilities?

Information-age technologies have the power to help answer these questions and bring our problems into focus as never before. Low-cost wireless sensors can provide up-to-the-minute air and water quality data at the neighborhood level or in the workplace. Distributed database technology can make multiple databases function as one, allowing us to test the interaction of an array of different variables. Data-mining systems can sift through data to more precisely identify health, safety, and environmental risks. And the Internet can make this information instantaneously available to the public.

The Center for American Progress recommends that the president and Congress work together to invest in and harness these new technologies to build an information infrastructure for stronger health, safety, and environmental protection. The Center envisions a host of important benefits flowing from this effort that could transform government decisionmaking. Problems and priorities would be crystallized. Many health, safety, and envi-

ronmental risks are hidden from public view. For example, it is impossible to actually see toxic chemicals causing cancer or polluted air causing childhood asthma. More robust data collection and analysis would help bring these risks to light and make it easier to spot adverse trends. When we have a clear picture of our problems, we can set sensible priorities—focused on the greatest threats—and craft targeted policy solutions that make maximum use of available resources.

Effective policies would also be easier to identify and expand. Frequently, we lack sufficient data to evaluate the results of our efforts to limit health, safety, and environmental harms. More information on program performance would help us determine what policies to extend and what to revise or discard. At the same time, performance data, packaged to highlight good and bad practices, could be used to spur constructive competition among federal agencies, states, local governments, and private companies. Improvements are often encouraged by the recognition of good performance and the threat of embarrassment associated with bad performance. The hope is that such spotlighting would push government and the private sector to adopt top-performing policy models and technology options to control health, safety, and environmental harms.

All of this would make political consensus easier to achieve. By clarifying problems and effective policies, we would narrow the zone in which political judgment plays out and potentially break the bitter stalemate over health, safety, and environmental regulation. Enhanced data promises to empower the public and create the political imperative for action. When hazards are exposed, experience shows the public will become engaged and demand solutions, offsetting the influence of special interests, which now dominate regulatory decisionmaking.

The private sector has already invested heavily in technology to collect and analyze data, enabling companies to manage inventories in real-time, measure the performance of product lines and marketing strategies, and identify priorities for capital allocation. In short, data is driving sound business decisions. Government should follow the private sector's lead. The Center proposes three broad steps to move government decisionmaking into the information age:

- *First, we should modernize data collection to address gaps in our knowledge about health, safety, and environmental dangers.* This includes, for example, adopting wireless sensor technology and expanding the use of electronic reporting, which can improve data quality, slash administrative overhead, and reduce reporting burdens on industry.
- *Second, we should manage and disseminate data in a way that allows for easy analysis.* In particular, this means integrating health, safety, and environmental data across government and making this data searchable through the Internet.
- *Third, we should develop systems to analyze data to set priorities, measure program performance, and guide effective policymaking.* Data should drive governmental decisionmaking. Crucial to this are comparative rankings that place health, safety, and environmental dangers in a context that is easily understood to policymakers and the public alike.

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While this chapter focuses on health, safety, and the environment, data-driven policymaking holds similar promise for a host of other progressive priorities. A government-wide commitment to enhance information through new technology would improve decisionmaking across an array of policy areas. For example, the areas of health care, immigration, homeland security, and education policy are similarly plagued by problems of data collection, management, and analysis. The Center for American Progress is committed to promoting data-driven decisionmaking in these areas as well.

The Center has chosen to focus on health, safety, and the environment for this chapter as a response to the policies pursued by the current administration, which has swept aside a host of crucial safeguards and turned its back on emerging problems, such as global warming. For decades, special interests and their allies in an array of industry-funded right-wing think tanks have developed and promoted policies designed to undermine government's ability to protect public health, safety, and the environment. The administration's actions are the culmination of this effort. In her recent book, Christine Todd Whitman, President Bush's former EPA administrator, laments the influence exerted by "antiregulatory lobbyists and extreme antigovernment ideologues."⁶ Progressives have offered vigorous opposition to these lobbyists and ideologues, but—lacking a similar organizational infrastructure—have not provided a competing vision.

The recommendations below take a first step in providing a progressive vision. The administration has been able to avoid public scrutiny by exploiting and hiding behind the complexity of the regulatory system. Data-driven decisionmaking promises to make this more difficult by bringing the consequences of government action—and inaction—out in the open.

CURRENT STATE OF PLAY

The Problem

In 1984, a massive chemical release at a Union Carbide plant in Bhopal, India, killed thousands and sickened or injured tens of thousands. Worried about the possibility of a similar event here, Congress responded with a novel and innovative law that embraced the power of new information technologies to promote health and safety improvements. Pursuant to this law, the Environmental Protection Agency (EPA) established the Toxic Release Inventory (TRI) to disseminate information on industrial toxic releases through the Internet. The disclosures made under the TRI had immediate and long-lasting effects. Community organizations and environmental groups, as well as the press and everyday citizens, were empowered to expose toxic dangers and demand action. Government decisionmakers were given more comprehensive and interactive data to evaluate toxic risks. And industrial facilities were able to track their own toxic releases, as well as their performance relative to other facilities. This heightened awareness—among the public, government, and industry itself—pushed facilities toward best practices that delivered dramatic results. Since facilities began reporting under the TRI in 1988, toxic releases have declined by nearly 50 percent.⁷

The political impetus for the TRI grew out of a “right-to-know” movement led by environmental organizations, labor unions, and citizen activists. During the 1960s and 1970s, a crescendo of environmental and workplace disasters brought home the problems of unhealthy air, contaminated water, and worker exposure to cancer-causing chemicals. In one of the most tragic cases, the residents of Love Canal, New York, suffered numerous birth defects and astronomical illness rates before they learned about the massive toxic waste dump on which their town was built. In 1978, the town was completely evacuated, drawing national attention and spurring passage of the Superfund legislation to identify and clean up toxic waste sites. Americans discovered they were living with risks they had no knowledge of and therefore no control over. The TRI was viewed as a continuation of this effort to inform the public of toxic risks in their communities.

Today, federal agencies collect vast amounts of data crucial to protecting public health, safety, and the environment—from information on foodborne illnesses to traffic fatalities to workplace injuries to air and water pollution. Nonetheless, persistent data gaps, poor information management, and the lack of systematic analysis hinder government’s ability to adopt more data-driven decisionmaking.

Among other things, we lack basic information to measure variations of smog and soot from community to community, assess worker exposure to hazardous chemicals, monitor toxic releases and the quality of drinking water in real-time, and track the health of our oceans. Meanwhile, the information we do collect is seldom linked together and made available through the Internet. For example, census data is not integrated with public health data and data on air and water pollution. This makes it more difficult for government decisionmakers, researchers, and the public to evaluate cumulative risks within communities, spot trends over time, establish correlations between corporate activity and health effects, and assess the performance of government programs and the private sector.

Due in large part to significant data gaps, policies and priorities are not developed in a systematic way so that the biggest problems and best solutions are readily apparent to government decision-makers and the public. For example, federal agencies generally do not perform comparative rankings, which can spotlight problems and suggest priorities, promote constructive competition among the states or entities being ranked to avoid or solve problems, and generate public pressure to implement solutions. This has made it easier for regulated entities to influence outcomes, and for the current administration to ignore health, safety, and environmental problems or even adopt policies that exacerbate them. More comprehensive data, put in a context that is easily understood, would help bring these problems to light and engage the public in counteracting the influence of special interests.

The Promise

Today, the values and goals of the right-to-know movement are widely embraced. Federal agencies across the board have made it a central mission to gather and analyze information on health, safety, and environmental risks, and broadly disseminate that information to the public. At the same time, advances in technology—most notably the Internet—have made these goals readily achievable. Through government web sites, a wealth of data is now at a citizen's fingertips.

The challenge now is taking the next step, so that data is more comprehensive, more integrated, and more easily understood. This means taking greater advantage of technologies already in use, such as electronic reporting software and analytical tools to link multiple databases. But it also means developing and employing technologies of the future; indeed, the next information revolution lies right before us, promising to translate our physical world into a digital one. For example, small wireless sensors have been developed that can measure temperature, light, sound, pressure, chemical concentration, and more. Sensors can be deployed to provide current data on just about anything in the physical environment, from air and water quality to the health of ecosystems to traffic flow to the condition of critical infrastructure, such as roads and bridges and the electrical grid.

In a new book about the promise of new technology for environmental protection, Feng Zhao and John Seely Brown describe how biologists are relying on 190 sensors, linked together by satellite, to remotely monitor the nesting habitat of Leach's Storm-Petrels on an island off the coast of Maine.⁸ Information collected by these sensors is immediately posted to the Internet, and made available to biologists on the other side of the country.

Soon, sensor networks like this could be ubiquitous. Sensors the size of a wristwatch can now be purchased for \$100 to \$200 each. With advances in nanotechnology, which involves the manipulation of matter at the atomic and molecular level, these sensors are expected to become much smaller and cheaper—as small as a gnat and costing no more than a few cents.⁹ This

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“smart dust”¹⁰ could be spread through the natural environment, workplaces, and highways, as well as homes, consumer products, and automobiles, to collect vast amounts of data on health, safety, and environmental threats wherever they may lie. Thoughtful upfront planning could ensure that we employ this technology without jeopardizing privacy.

New powerful analytical tools, also propelled by nanotechnology, could be employed to comb this data to instantly identify problem areas, while government decisionmakers, researchers, and the public could use intelligent browsers to ask almost any question imaginable. Zhao and Brown call this “Google on steroids.” In contemplating such a future, they speculate further about the possibilities:

Equipped with a new generation of sensors, automobiles and trucks could monitor their own emissions and download them at a service station or to a home computer, or transmit the data in batches over cellular networks. When cars can talk to each other we can begin to create dynamic networks that can be optimized to reduce congestion, cut air pollution, speed up just-in-time deliveries, or help people find the closest available parking space in an unfamiliar city. This is more than just about convenience. We waste enough energy sitting in traffic jams each year to run our entire domestic airline fleet.¹¹

How far are we from entering this digital world? The answer depends on our commitment to developing a comprehensive, coordinated strategy for getting there.

PROGRESSIVE PRINCIPLES

The American people have a fundamental right to know about the health, safety, and environmental dangers with which they live. A functioning democracy depends on the free flow of information, allowing the public to participate in government decisions and hold officials accountable for results. Grounding our decisionmaking in good data can help enhance transparency and public confidence. For example, if an agency were to rank its top 10 regulatory priorities and then identify the best performing individual companies or state and local governments, both the regulator and the regulated—and the public—would have a basis upon which they could measure performance and identify best practices for future performance.

Likewise, greater knowledge about health, safety, and environmental dangers should lead to greater corporate accountability. Our religious and ethical traditions instruct that those who do harm should take responsibility for their actions. This principle extends to businesses that inflict health, safety, and environmental damage on the public. The recommendations below are based on the assumption that where problems are identified, we should expect those responsible to mitigate damage and demonstrate improvement.

Regulatory safeguards should be no more restrictive or costly than necessary to ensure the protection of public health, safety, and the environment. Too often, narrow special interests have argued that health, safety, and environmental safeguards impose unnecessary and burdensome costs on private sector activity. While the costs to regulated entities are often vastly overstated,¹² we agree that society should do everything possible to control them without sacrificing necessary safeguards. Indeed, industry stands to gain from new technology as much as the public does.

Innovative technology promises fewer reporting burdens and more targeted policy solutions that eliminate unnecessary costs.

Protective action should not be postponed until all data gaps are filled and all uncertainty is eliminated. By properly employing technology, policymakers will undoubtedly improve data collection and analysis. Despite such improvements, some degree of uncertainty will inevitably remain. Even where information is imperfect or incomplete, those charged with the responsibility for protecting the public and the environment must take timely action using the best information available.

Improved data and enhanced understanding should facilitate special attention on subpopulations particularly at risk. Obtaining more data and enhancing our understanding of it allows policymakers to prioritize both the problems that require attention and the solutions that should be pursued. Furthermore, this enables policymakers to pay special attention to groups of people at disproportionate risk from health, safety, or environmental dangers. Such groups include children, the elderly, and those who live in areas with high concentrations of environmental contaminants—frequently poor, minority communities. The risk of a particular contaminant might look small when spread out over the entire population, yet still carry significant risks for certain subgroups. It is therefore essential that policymakers analyze data to account for social justice and equity concerns.

We must be willing to “follow the data.” The pursuit of better data and better analysis of data allows us to address problems where they are discovered, expand programs that are shown to be working, and improve or eliminate those that are not. Ultimately, we expect such data-driven decisionmaking to produce stronger, more effective health, safety, and environmental protection. Indeed, if the Bush administration had acted on the data, rather than seeking to distort or conceal it, we would have tougher standards on mercury emissions, the dumping of mine waste, the prevention of repetitive-motion injuries on the job, tire-pressure monitoring, and Listeria-contaminated meat, just to name a few examples.¹³ Information should drive the agenda, not the other way around.

By investing in technological breakthroughs and implementing existing cutting-edge technology as recommended below, we can increase public knowledge about existing public health, safety, and environmental dangers; enhance corporate accountability and encourage preventive or corrective action; reduce the costs of unnecessary or ineffective regulation; and focus our resources on those interventions that are most effective.

PROGRESSIVE POLICY RECOMMENDATIONS AND ACTION ITEMS

Our recommendations are divided into three parts: (1) using new technology to address information gaps and enhance data collection; (2) managing and disseminating data to improve analysis and empower the public; and (3) using data to enhance government decisionmaking

A functioning democracy depends on the free flow of information, allowing the public to participate in government decisions and hold officials accountable for results. Grounding our decisionmaking in good data can help enhance transparency and public confidence.

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and accountability. While the executive branch could implement some or all of these recommendations without legislation, we believe it is important for Congress to act to enhance effectiveness and accountability. Implementation will require a level of government coordination and commitment that is unlikely to happen without the force of law. Ultimately, congressional oversight will be critical to ensuring that federal agencies follow through.

Congress must also be willing to make the necessary investments in new technology. Over the long run, these investments promise to produce significant savings—by lowering government overhead, minimizing reporting costs associated with regulation, and saving money currently spent addressing preventable health, safety, and environmental harms. The policymaking benefits of a comprehensive information infrastructure for government decisionmaking are even more appealing. These include: greater precision in identifying problem areas; more responsive and transparent government; more effective safeguards; and an informed public, empowered to fight for a cleaner environment and safer, healthier communities.

Information Gaps and Data Collection

A comprehensive effort to address information gaps and enhance data collection through new technologies promises more responsive and smarter government. The invisible would become visible, allowing for clearer identification of problems. Data could be analyzed immediately, facilitating swift action to head off and reverse health, safety, and environmental damage. And information would be more accurate, giving us greater confidence in our conclusions.

Starting with data gaps, consider a few examples. We do not adequately monitor for regional variations of smog and soot, frequently missing dangerous levels of air pollution.¹⁴ Each “urban area” of more than 200,000 people is required to have only one monitoring station to detect exposure,¹⁵ while air quality in counties without an “urban area” is not monitored at all—even if those counties are downwind from polluting sources or between counties that do not meet air quality standards. Nor do we track the health of our oceans, despite their alarming deterioration. According to the U.S. Commission on Ocean Policy, “there is no national monitoring network in place to assess their status, track changes over time, help identify causes and impacts, or determine the success of management efforts.”¹⁶

The lack of information regarding worker health and safety is even more serious. There has not been a national study to broadly assess worker exposure to hazardous chemicals in 20 years, while the Occupational Safety and Health Administration inspects less than 1 percent of all workplaces each year.¹⁷ Thus, we lack essential information to address occupational disease, which kills an estimated 50,000 to 60,000 American workers annually.

Even where information is collected, by the time it reaches the government and the public, it is frequently too late to act. We do not collect real-time data on drinking-water quality, leaving us vulnerable to contamination, including by a terrorist act. The Government Accountability Office (GAO) recently consulted 43 nationally recognized experts on this possibility, and issued a report noting that “experts most strongly supported developing near real-time monitoring technologies to quickly detect contaminants in treated drinking water on its way to consumers.”¹⁸

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Real-time monitoring is also unavailable for toxic releases into the air, land and water. Instead, many industrial facilities report only *estimates*¹⁹ of their pollution—found to understate actual pollution²⁰—and this data is not disseminated until years after the fact. The EPA did not publicly release the 2002 toxic-release data until June 2004, and data from 2003 did not become available until May 2005. Imagine what would happen if the public could obtain accurate, timely news of a water or air pollution emergency. There can be little doubt that a public so informed would take decisive action to ensure that such problems were quickly addressed.

To address problems of timeliness, we should move to adopt sensor technology that can provide precise, real-time air and water quality data, which computers can comb to instantly identify problem areas. Such sensor networks have the added advantage of allowing the problems that exist to be identified with specificity, as opposed to relying on averages for metropolitan areas.

Where sensor technology is not an option, electronic reporting offers the opportunity to improve data quality. Industrial facilities are now able to report their toxic releases electronically using new software that scans for errors, such as missing or inconsistent data.²¹ We should move to expand electronic reporting and harmonize information collection across agencies and agency programs. This would not only speed information collection and improve data quality, but would eliminate duplication, slash administrative overhead, and significantly reduce industry reporting burdens.

ACTION ITEMS TO IDENTIFY INFORMATION GAPS

- The White House Office of Management and Budget (OMB), acting through its Office of E-Government and Office of Information and Regulatory Affairs, should coordinate agency efforts to improve health, safety, and environmental information.
- Each health, safety, and environmental agency²² should identify the 10 most critical data gaps in its area that impede the fulfillment of its mission and hinder measurement of government performance.
- Federal agencies, led and coordinated by OMB, should identify information technology that can address priority data gaps.
- The Congress should provide the funds to invest in, and federal agencies should employ, information technologies, such as pollution sensors and electronic reporting software, to improve data quality and speed information collection and dissemination.

- Federal agencies should move to adopt integrated electronic reporting, so that regulated entities do not have to report the same information to multiple agencies and agency programs.

Data Management and Dissemination

As we collect more data, information management becomes even more critical. If data is not managed effectively, analysis suffers and the data's power is diminished. Currently, health, safety, and environmental databases are seldom integrated across government agencies or even within agencies, making it more difficult to evaluate cumulative risks within communities, spot trends over time, establish correlations between industrial activity and health effects, and assess the overall performance of regulated entities.

Fortunately, such integration is eminently achievable. Cross-agency information collection naturally facilitates database integration, while distributed database technology can make multiple databases function as one—even if they were put together with different database software. Unfortunately, this technology is underutilized.

Besides impeding analysis, this lack of integration limits the quality of information delivered to the public. EPA is probably the most advanced agency with respect to disseminating data through the Internet, yet the public is still unable to retrieve, through a single search, all data reported to EPA by zip code or industrial facility. Likewise, pollution data (*i.e.*, toxic emissions) is not linked to information on health outcomes (*i.e.*, resulting illness or fatalities), providing little context for understanding its significance.

By moving toward greater data integration and more meaningful dissemination, we could unlock the power of this information. Data-mining systems could sift through data to more precisely identify health, safety, and environmental problems, while integrated databases, searchable through the Internet, would empower the public to hold government and corporations accountable for improvements. Consider the potential benefits of an integrated database that presents every company's record of compliance with laws and regulations, including health, safety, and environmental standards. Federal contracting officials, who are required to ensure that prospective federal contractors have demonstrated a "satisfactory record of integrity and business ethics,"²³ would have a basis on which to evaluate potential contractors and the public would have a basis for holding contracting officials accountable for their determinations.

In addition, by making such a database available through the Internet, members of the public could invest in socially responsible ventures.²⁴ For the investor, there are economic reasons for wanting this information beyond pure altruism: poor health, safety, or environmental performance may lead to fines, litigation, or loss of government contracts that reduce bottom-line profits. According to Innovest, a financial advisory firm, companies with strong environmental performance yield investment returns from 1.5 to 3 points higher than companies across the stock market.²⁵

A bright spotlight on a company's health, safety, and environmental record is likely to produce improved performance. The same is undoubtedly true for government performance. With a firm commitment to data management and dissemination, we can turn the spotlight on.

ACTION ITEMS FOR DATA MANAGEMENT AND DISSEMINATION

- Each federal agency should integrate its own health, safety, and environmental databases and make this data searchable through the Internet, so that the public can obtain all the agency's data by zip code or by specific facility, among other possible variables.
- Federal agencies should move to link data on industrial outputs (e.g., product defects, food contamination, air and water pollution, or chemicals used in the workplace) with data on health, safety, and environmental consequences.
- Federal agencies, led and coordinated by OMB, should create an integrated, centralized database that presents each company's history of compliance with laws and regulations, including health, safety, and environmental standards.
- Each federal agency should convene its partners in state government to develop a plan for better information sharing, including the integration of data collection, analysis, management, and dissemination.
- EPA, which has government-wide leadership for advancing e-rulemaking,²⁶ should work to establish an integrated system that would allow the public to track the development, implementation, and enforcement of each major rule.
- OMB and EPA should convene an interagency panel to devise a plan and identify resource needs to create a government-wide searchable database that includes: (1) all health, safety, and environmental data by zip code; (2) all data reported by a specific entity, such as an industrial facility; (3) census data; and (4) data on enforcement actions against specific entities.
- Federal agencies should identify (1) legal barriers that preclude data integration and dissemination²⁷ and (2) privacy issues that militate against data integration and dissemination.

Once gathered, data must be analyzed and put in a context that is easily understood, so that it drives health, safety, and environmental decisionmaking. Filling data gaps is of little use if the data is not provided to decisionmakers in a way that makes the biggest problems and most effective solutions readily apparent.

Data-Driven Decisionmaking

Once gathered, data must be analyzed and put in a context that is easily understood, so that it drives health, safety, and environmental decisionmaking. Filling data gaps is of little use if the data is not provided to decisionmakers in a way that makes the biggest problems and most effective solutions readily apparent.

Comparative rankings—currently seldom used in this country—are a crucial part of this effort. Government decisionmakers can use rankings to set priorities, target resources, and guide effective policy responses. Such rankings can also promote constructive competition, which in

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turn can spur innovation and create public pressure to address problem areas. For example, Belgium's poor 2001 ranking²⁸ in the Environmental Sustainability Index—a project of the World Economic Forum that measures 21 core indicators of environmental performance in 146 countries²⁹—caused a public uproar and a new focus on the country's pollution problems. Pollution was just as bad before the index's release, but the rankings (in which Belgium finished 79th, behind Albania) gave Belgians a context for understanding environmental health risks and their government's relative performance.³⁰

To develop rankings like these, we first must measure performance using key indicators. Due in part to data gaps, agencies often have been unable to measure performance in terms of *outcomes* (e.g., demonstrable improvements in air and water quality), making it more difficult to judge whether programs are working.

Enhanced data collection and management is essential to the generation of outcome data, which in turn enables agencies to develop rankings to spotlight good and bad performance, promote best practices, and inform decisionmaking. In particular, agencies should identify top performing programs and policy solutions, and rank the performance of states and metropolitan areas. Based on the results of these rankings, we could expand successful strategies to programs and areas that are underperforming. At the same time, consensus would be easier to achieve and public trust would be enhanced as the benefits of government action became more apparent.

Agencies should also rank the performance of regulated entities or facilities. As a model, Great Britain's Environment Agency publishes an annual report that grades the performance of individual companies.³¹ This report has allowed members of the public to better understand risks in their communities, while encouraging industry to adopt best practices.

Rankings should also be used to set priorities. In setting priorities, federal agencies should rank the greatest threats to health, safety, and the environment, giving special attention to at-risk populations, such as children, the elderly, and those who live in areas with high concentrations of environmental contaminants. For example, this could mean identifying the greatest threats to children's health and safety, and ranking the communities whose children are in the most peril. Few communities would tolerate being in the "top" 10.

Indeed, the public is unlikely to tolerate poor health, safety, and environmental performance all the way around. Performance measurement, coupled with comparative rankings, provides a context for understanding, so that problems and solutions are crystallized, thereby engaging the public in government decisionmaking to produce better policy results.

ACTION ITEMS FOR DATA-DRIVEN DECISIONMAKING

- Federal agencies should measure the performance of their programs in terms of outcomes where feasible, and present the results in their annual performance reports to Congress (required under the Government Performance and Results Act).

- Each federal agency should annually rank the top 10 health, safety, or environmental problems under its jurisdiction, quantifying the problem to the extent possible (*e.g.*, the estimated number of premature deaths from air pollution). In subsequent performance reports, each agency should evaluate its progress in addressing these problems.
- Each agency should spotlight and expand top-performing policy solutions for addressing its top 10 priorities.
- Each agency should identify the most effective technologies for controlling hazards to promote best practices among industry.
- Agencies should annually rank the health, safety, and environmental performance of states, major metropolitan areas, and individual companies.
- Agencies should identify vulnerable subpopulations—including children, the elderly, and at-risk communities—and rank the greatest risks to those subpopulations.
- Each agency should prepare an annual report, for release to the public, that highlights the information discussed above, including: (1) top 10 priority concerns; (2) top-performing policy solutions and progress achieved in dealing with priority concerns; (3) the most effective technology for controlling hazards; (4) performance rankings for states and metropolitan areas, as well as individual companies; (5) the top 10 health and safety threats under the agency’s jurisdiction to children and the elderly, along with the top 100 locations where risk is highest; and (6) the 100 communities at the greatest overall risk.

ENDNOTES

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- ¹⁷ AFL-CIO, Death on the Job: The Toll of Neglect (April 2004).
- ¹⁸ Government Accountability Office, Drinking Water: Experts’ Views on Future Federal Funding Can Best Be Spent to Improve Security, available at <http://www.gao.gov/new.items/d0429.pdf> (last viewed Jan. 27, 2004).
- ¹⁹ See EPA, The Toxics Release Inventory (TRI) and Factors to Consider When Using TRI Data, at 13 (2002) available at http://www.epa.gov/tri/2002_tri_brochure.pdf (last viewed Feb. 2, 2005).
- ²⁰ See the Environmental Integrity Project and the Galveston-Houston Association for Smog Prevention, Whose Counting? The Systematic Underreporting of Toxic Air Emissions (June 2004), available at http://www.environmentalintegrity.org/pubs/TRIFINALJune_22.pdf (last viewed Feb. 2, 2005).
- ²¹ This software is called TRI-ME, which stands for Toxics Release Inventory Made Easy. EPA describes TRI-ME on its web site at <http://www.epa.gov/tri/report/trime/> (last viewed Jan. 31, 2005).
- ²² This includes, but should not necessarily be limited to, the Centers for Disease Control and Prevention, the Department of Energy, the Department of Interior, the Department of Transportation, the Environmental Protection Agency, the Occupational Safety and Health Administration, the U.S. Department of Agriculture, the Food and Drug Administration, and the Mine Safety and Health Administration. Hereafter references to federal agencies should be read to include only health, safety and environmental agencies.
- ²³ Federal Acquisition Regulation, Section 9.104(d), available at <http://www.acqnet.gov/far/> (last viewed Jan. 27, 2004).
- ²⁴ Socially responsible investment now accounts for about 11 percent of professionally managed assets (amounting to \$2.16 trillion) in the United States. See Social Investment Forum, 2003 Report on Socially Responsible Investing Trends in the United States, available at http://www.socialinvest.org/areas/research/trends/sri_trends_report_2003.pdf (last viewed Jan. 27, 2004).
- ²⁵ Innovest, Corporate Environmental Governance: A Study into the Influence of Environmental Governance and Financial Performance, November 2004, available at http://www.innovestgroup.com/pdfs/2004-11-09-Environmental_Governance.pdf (last viewed Jan. 27, 2004).
- ²⁶ Under President Bush’s E-Government Initiative, EPA assumed government-wide leadership for advancing e-rulemaking, which seeks to facilitate participation in regulatory decision-making by, among other things, accepting public input electronically and providing rulemaking material in one place through the Internet.
- ²⁷ See e.g., the Confidential Information Protection and Statistical Efficiency Act (Title V of the E-Government Act).
- ²⁸ See 2001 Environmental Sustainability Index at <http://www.ciesin.columbia.edu/indicators/ESI/archive.html> (last viewed Jan. 27, 2004).
- ²⁹ See the project’s web site at <http://www.ciesin.columbia.edu/indicators/ESI/> (last viewed Jan. 27, 2004).

³⁰ For discussion, see Daniel C. Esty, Environmental Performance Measurement: The Global 2001-2002 Report, Chapter 1 (Oxford University Press 2002), *available at* <http://www.law.yale.edu/outside/html/faculty/danesty/why.measurmt.matters.pdf> (last viewed Jan. 27, 2004).

³¹ The Environment Agency, Spotlight 2003, *available at* http://www.environment-agency.gov.uk/commondata/acrobat/spotlight_eng_no_cvr_834878.pdf (last viewed Jan. 27, 2004).