

# Environment

**By H. Richard Seibert**

Discussions of environmental policy are often framed as pro-environment versus pro-economy. But good policymaking will advance both environmental and economic goals. To achieve that, policymakers must have rational, objective assessments of various potential risks and the costs of addressing those risks.

## **The state should:**

- Ground environmental policies in objective, scientific studies.
- Employ cost-benefit analysis when designing policy responses to environmental concerns.
- Communicate the results of studies and analysis to the public, and utilize public response when formulating risk-management decisions.

## **BACKGROUND**

Maryland has been called “America in Miniature,” in part because its geography represents a sampling of the entire nation. The state has mountains in the West, rolling hills, grassy plains, and hundreds of miles of coastline. In addition, Maryland is part of the urban sprawl of the East Coast. Those attributes give the state its charm, but they make Maryland a difficult place to formulate and implement environmental regulation.

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As all states, Maryland needs to protect the environment and human health while promoting economic growth. Those goals are not exclusive, but mutual—policymakers must succeed at both or they fail the citizens of the state. As elsewhere, most of the “easy” environmental choices in Maryland have already been made; car emissions are monitored, industrial discharges are regulated, and human activities from mining to landfilling follow strict rules. Future environmental choices will require policymakers to make much “tougher” decisions.

Their task is made more difficult because they are increasingly confronted with contradictory scientific evidence on various environmental issues. A potential risk may seem severe given one collection of data assembled and interpreted by one group of esteemed researchers, and then seem negligible according to data from another equally esteemed group. And, as policymakers wrestle with the conflicting data, the emotional nature of environmental issues increasingly pushes them to make decisions for the wrong reasons. Finite resources will be expended to reduce minor risks that garner public attention, while more significant risks go unaddressed.

## **POLICY RECOMMENDATIONS**

As former U.S. Environmental Protection Agency Administrator William Reilly noted,

People have the right to expect that public officials are making the right choices for the right reasons. We need to develop a new system for taking action on the environment that isn't based on

responding to the evening news. What we have had in the United States is environmental agenda setting by episodic panic.

To provide rational decision-making, Maryland should adopt as its guiding premise the summary of the report “Reducing Risk: Setting Priorities and Strategies for Environmental Protection,” written by EPA’s Science Advisory Board:

There are heavy costs involved if society fails to set environmental priorities based on risk. If infinite resources are expended on lower-priority problems at the expense of higher-priority risks, then society will face needlessly high risks. If priorities are established based on the greatest opportunities to reduce risk, total risk will be reduced in a more efficient way, lessening threats to both public health and local and global ecosystems.

As such, when confronted with a potential hazard, Maryland should:

- determine the potential risk of the hazard,
- compare the risk of the hazard versus risks from other hazards, and
- prioritize which hazards the state will address based upon which pose the most risks.

### **Principles of Scientific Analysis**

But different organizations offer “science” based on their differing agendas. How can policymakers assure that a scientific study meets at least minimum standards for objectivity and completeness? The following

principles provide a basis to assure that those minimal standards are met:

**A risk assessment should be complete.** A complete assessment of a hazard, using peer-reviewed, state-of-the-art information, includes consideration of potential consequences for human health, quality of life, health of ecosystems, and economic well being.

**All relevant information should be used in risk assessments.** Assessments of risk should use all relevant information necessary to characterize a potential health or environmental hazard. If an assessment does not include all relevant information, there should be a clear explanation of the reasons for such an omission and explicit judgments about the quality and weight of the evidence.

**Estimating risk should be based on clear definitions.** Both quantitative and qualitative estimates of risk should be based on clear definitions of hazards, types and amount of exposures, the variability of response among affected populations, and effects over time.

**Claims about scientific certainty should be spelled out and sources given.** Risk assessment is an ongoing process that needs to reflect the latest information. Claims about scientific truths and consensus should, therefore, be made with caution. Assessments should clearly communicate sources, assumptions, limitations, and uncertainties in the available scientific data.

**Risk considerations should be clearly communicated.** Judgments of the seriousness of hazards

should include quantitative estimates of risk and consideration of qualitative factors to enhance their understanding and use not only by scientists and policymakers but also by the public.

**Opportunities should exist for informed public contribution to risk-management decisions.** Risk-management plans and policies should include early opportunities for participation by a variety of interests. Such participation should involve evaluating risk estimates and risk-reduction alternatives that are compatible with other significant societal goals. Risk-assessment information should be available and understood by all participants in the risk-management process.

**Decision-makers should use risk assessments to prioritize public health and environmental risk management.** Risk-based priorities should be identified using the best possible assessment to help assure that finite resources are allocated to addressing the largest and most important health and environmental threats. Risk-ranking techniques should be developed to compare the quality of assessments of natural and manmade risks.

**Risk-management decisions should consider the benefits and costs of alternative policies.** When risk-management policies are developed, policymakers should insist on having information about what the expected benefits will be, who will incur gains or losses, and how much each alternative will cost and who will pay. When combined with the insight provided by risk assessments, such benefit and cost infor-

mation can yield the fairest level of public health, environmental, and economic protection.

**Risk-management decisions should encourage the development and use of new knowledge and insight.** Policies should be designed so that they provide incentives for new scientific knowledge and social, ethical, and legal insight. Such incentives will continuously improve the quality of risk-based decisions.

**Recognize that implementation strategies are a key element of risk management.** Risk-management actions should consider a range of innovative and adaptive policies and administrative steps to achieve public health and environmental goals more rapidly and cost-effectively. Those strategies should include non-regulatory approaches.

### **Principles of Cost-Benefit Analysis**

Similarly, minimum standards should be adopted on the use of cost-benefit analysis. Those standards should include the following:

**Cost-benefit analysis should be an integral part of the decision-making process.** State officials should consider the benefits and costs of proposed policies during the decision-making process. The state should not be bound by a strict cost-benefit test, but officials should be able to justify decisions where expected costs exceed expected benefits, or where costs are uncertain or in dispute.

**Cost-benefit analysis should be used to identify the distributional consequences of a policy.** Cost-benefit analysis should be used to compare the nega-

tive effects of policy decisions, such as job losses or increased costs to an industry in a local economy, with the positive effects, such as improved health.

**Cost-benefit analysis should be used to design policy strategies that achieve a desired goal at the lowest possible cost.** In the past, environmental, health, and safety policies have relied on a one-size-fits-all or command-and-control approach. Cost-benefit analysis can highlight the extent to which cost savings can be achieved using alternative, more flexible approaches such as performance standards or market-based approaches that reward compliance at a lower cost to society.

**Policymakers should incorporate cost-benefit analysis in the decision-making process at all levels of government.** Decision-makers at all levels of government should be encouraged to consider the benefits and cost of proposed policies. The scale of the cost-benefit analysis should depend on the risks involved, the timeframe of the decision-making process, and the available scientific and economic information. Although a comprehensive cost-benefit analysis may not be warranted in all cases, a rough analysis can be useful in providing public officials with an estimate of the benefits and costs of a proposed policy.

**Whenever possible, officials should rely on more than one cost-benefit analysis to consider and weigh a variety of regulatory options.** To increase the amount of information available to decision-makers, a variety of policy alternatives for achieving a desired goal should be considered. To accomplish

that, more than one cost-benefit analysis should be performed so that the benefits and costs associated with various alternatives can be estimated and compared.

**A quality cost-benefit analysis depends on the availability of a scientifically sound risk assessment.** A scientifically sound risk assessment of a hazard should include all relevant peer-reviewed, up-to-date information. Such an assessment would take into consideration all potential consequences for human health, quality of life, and health of ecosystems. A risk assessment should clearly communicate sources, assumptions, limitations, and uncertainties in the available scientific data.

**Risks need to be estimated qualitatively and quantitatively before benefits and costs can be measured.** Assessments of risk should use all relevant information necessary to characterize a potential health or environmental hazard. Both quantitative and qualitative estimates of risk should be based on clear definitions of hazards, types and amounts of exposures, the variability of response among affected populations, and effects over time. The benefits and costs of protecting the public from a hazard cannot be estimated until the risks of that hazard and the uncertainties are qualitatively and quantitatively identified.

**All key assumptions should be spelled out clearly and, whenever possible, uncertainties should be identified and discussed.** A core set of economic assumptions should be used in calculating the benefits and costs associated with environmental, health, and safety regulations. Key assumptions

include the social discount rate, the value of reducing risks of accidents and premature death, and the value associated with other improvements in health. If uncertainties exist in the available scientific and economic information, estimates based on uncertain information should be clearly identified and discussed.