THE ANNAPOLIS CENTER
The Annapolis Accords for Cost-benefit Analysis

Growing concern over the effect of environmental, health and safety policies on the economy has lead to increased consideration of the benefits and costs of such policies. Cost-benefit analysis has been used as a means of comparing the costs of positive benefits with the negative impacts, and can result in improved environmental, health and safety decision-making and prioritization.

Policy alternatives cannot be compared, and management decisions should not be made, unless the risks associated with a particular hazard are identified and the benefits and costs of regulating that hazard are quantified. The *Annapolis Accords For Cost-benefit Analysis* have been developed as a guide to understanding how risk assessment and cost-benefit analysis can be incorporated in the decision-making process for the development of legislation, regulations, or operational policy.

COST-BENEFIT ANALYSIS AS A DECISIONMAKING TOOL

Cost-benefit analysis should be an integral part of the decision-making process. Cost-benefit analysis should be used to provide information to decision-makers and the public on the benefits and costs of policies to protect public environmental, health and safety quality. Decision-makers should not be bound by a strict cost-benefit test, but they 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. As a decision-making tool, cost-benefit analysis allows decision-makers to consider the positive and negative impacts of a policy before it is implemented. The analysis should be used to compare the negative impacts of policy decisions, such as job losses or increased costs to an industry in a local economy, with the positive impacts, 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 and market-based approaches, that reward compliance at a lower overall cost to society.

Policymakers should attempt to 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 cost-benefit analysis can be useful in providing decision-makers with an estimate of the benefits and costs of a proposed policy.

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

ASSESSMENTS OF BENEFITS AND COSTS

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 which takes 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 and 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 this information should be clearly identified and discussed.

Benefits and costs should be quantified whenever possible. Not all impacts of a regulatory policy can be quantified, or expressed in monetary terms. The available information may imply ranges of possible values for estimating benefits and costs, and not single numbers, which makes quantification difficult. When this occurs, best estimates of the costs and benefits should be included along with a description of the uncertainties. This will prevent qualitative factors that are not easily quantified from being ignored in a cost-benefit analysis.

Peer review is a necessary part of a complete cost-benefit analysis. Given the uncertainties inherent in cost-benefit analysis, the results should be peer-reviewed by an outside panel of economic and scientific experts. Before a cost-benefit analysis is performed, guidelines should be established by an outside review body for agencies to follow in conducting cost-benefit analysis, and revised periodically on the basis of new scientific and economic information.

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