

Environmental Cost-Benefit Analysis



Any project, whether a Greenfield development, Brownfield redevelopment, or even a remediation program, has inherent costs and benefits. These internal costs and benefits are often accounted for in making decisions on how to proceed with each project – how much will it cost and what will it achieve. When presented with multiple options on how to proceed at any point in the project, the selected option should deliver maximum benefit for minimum cost incurred. However, when it comes to environmental issues, such analysis is limited in two key ways: Firstly, environmental benefits are often difficult to quantify and monetize, and secondly, externalities are not considered.

Environmental cost-benefit analysis (ECBA) addresses these two limitations. It allows for the benefits from environmental protection or restoration to be quantified and monetized using publicly available data on the inherent value of natural resources, habitats, and species. Thus, a mitigation cost in dollars can result in an environmental benefit that can also be expressed in dollars. Conversely, environmental damage or degradation can be monetized to justify a level of mitigation expenditure, as well as potential regulatory and legal penalties.

ECBA also considers externalities that can result from project development. These externalities may not currently affect the internal or even regulatory decision-making process. However, they can result in costs or benefits to society as whole. For example, the emission of greenhouse gases (GHG) is not currently regulated in the United States; however, there is a cost to society and the planet as whole for such emissions. In some cases, a reduction in GHG emissions may not be of financial benefit to the project, but would be to society.

Aquilogic staff has partnered with environmental economists to conduct full ECBA for major industrial developments, brownfield retrofits, and major remediation programs.