

GENERATIONAL COST-BENEFIT ANALYSIS

In assessing the projected benefits in relation to present-day costs, recent work suggests that it is important to use realistic assumptions in any underlying models. Economists argue that ecosystem restoration projects should be evaluated using cost benefit analysis (CBA). But conventional CBA is inadequate to evaluate projects designed to restore depleted marine ecosystems and fisheries (Sumaila 2001). Discounting at prevailing rates reduces benefits that accrue in the distant future down to almost nothing. (Sumaila 2001) proposes a different approach to CBA, denoted Generational CBA.

This new approach discounts the flows of costs and benefits from the perspective of all generations, both current and future. While the conventional CBA discounts the costs and benefits from restoration efforts using only the time perspective (denoted by the discounting clock) of the current generation, Generational CBA takes into account the fact that current restoration efforts may produce benefits to future generations, long after present generations cease to exist. Benefits to future generations need to be valued properly by discounting the flows of net benefits to each generation using their respective discounting clocks. In this way more realistic benefits can be projected, and the returns more realistically evaluated in the context of present-day costs. Typically, benefits are much higher under the Generational CBA than under conventional CBA, and the restoration of ecosystems appears to be much more cost-effective.

The following graph shows the modelled net benefits to a fishery from investing in ecosystem restoration, with benefits assessed using both CBA (CM) and GBA (GM) for two options – maintain the status quo (do not invest in restoration) and invest in restoration. Restoration clearly provides greater benefits when assessed using the GBA approach.

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