

## Sustainability assessment: accounting for the triple bottom line

**Sustainable development requires a broader approach to policy and new criteria to measure 'progress'. But how do you weigh up the economic value of relevant ecosystem goods and services against their environmental value, or the 'public good', in this broader approach? What tools are available and how are they applied?**

The definition of sustainability implies that more than just the economic costs and benefits of a government policy or business strategy need to be taken into account. The 'triple bottom line' approach – the inclusion of social, economic and environmental criteria and objectives – is central to assessing how a policy, project or resource allocation will meet agreed objectives.

Depending on the scale of the policy or project and its effects, criteria used to measure progress towards a triple bottom line objective might include potential

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environmental impacts on ecosystem goods and services; associated economic costs and benefits; social or health impacts; and changes to aesthetic and cultural values.

The challenge for decision-makers is how to combine all of these values in a framework that weighs up different policy or investment options, because – depending on the criteria used – the outcomes may be vastly different.

For example, how can you assess the worth of a project that will provide benefits to the local community by increasing employment levels, but at the expense of a vast decline in the environmental conditions of the local surroundings?

During the 1980s and '90s, experts

developed different frameworks for sustainability assessment, such as strategic environmental assessment (SEA) and environmental impact assessment (EIA); and, more recently, sustainability impact assessment (SIA) and integrated sustainability assessment (ISA).<sup>1</sup>

Analytical tools used within these assessment frameworks include participatory tools, whereby stakeholders are invited to take part in the assessment; scenario tools, which formulate different options or scenarios for consideration, then approval; multi-criteria analysis (MCA), a decision-aiding process using mathematical software to rank different strategies; and economic valuation tools.<sup>2</sup>

Tools such as MCA require each criterion to be measured in the unit that is most relevant or meaningful – for example, environmental impacts may be measured by the change in population numbers of native species. Other methods require all

criteria to be translated into a common unit for comparison. Examples of the latter are economic valuation tools such as cost-benefit analysis, where methods have been developed to allow all impacts to be converted to a dollar value.

As part of the collaborative CSIRO–Myer Foundation Ecosystem Services Project<sup>3</sup> in Australia, the deliberative multi-criteria evaluation (DMCE) method<sup>4</sup> was used to assess recreation and tourism options and their impacts on ecosystem services in Victoria's Goulburn-Broken catchment.

The DMCE method combines several different tools, including participatory processes to elicit stakeholder values, scenario planning tools and MCA. DMCE



**Using sustainability assessment tools to reduce the 'footprint' of tourism on the environment was the focus of a recent study in Victoria's Goulburn-Broken catchment region.** University of Melbourne/Dookie

helps in assessing policy or management options by ranking them in terms of their different environmental, economic and social impacts. The method is based on combining the benefits of decision-aiding MCA software with the benefits of a deliberative process that allows individual stakeholders to give their opinions and learn from others.

The main findings of the Goulburn-Broken catchment project fed into the development of a more balanced management strategy for the region, in terms of the economic, environmental and social issues of tourism, emphasising the effects of education on tourists to lessen environmental damage.

As this example shows, achieving sustainability relies upon accurate scientific predictions of impacts of change in policy or strategy, then integrating this information in a framework that includes the values and opinions of those who will be affected by this change.

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1 OECD (2008) *Conducting Sustainability Assessments*. Organisation for Economic Co-operation and Development, Amsterdam. See [http://www.oecd.org/document/34/0,3343,en\\_2649\\_37425\\_40914402\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/34/0,3343,en_2649_37425_40914402_1_1_1_1,00.html).

2 See *Advanced Tools for Sustainability Assessment*: <http://ivm5.ivm.vu.nl/sat/>.

3 See [www.ecosystems-services-project.org](http://www.ecosystems-services-project.org).

4 Proctor W and Drechsler M (2006) Deliberative multicriteria evaluation. *Environment and Planning C: Government and Policy* 24(2), 169–190. See <http://www.envplan.com/abstract.cgi?id=c22s>.