
The policy-guiding value of sustainable development indicators: an introduction

Guest Editor: Philip Lawn

Sustainable development first emerged as a popular catch-cry following the release of the Brundtland Report by the World Commission on Environment and Development in 1987 [1]. However, it was not until the 1992 Earth Summit in Rio de Janeiro and the widespread promotion of the United Nations' Agenda 21 that sustainable development was firmly established as a desirable policy objective [2]. Since this time, many national governments have introduced a range of new policy measures in an attempt to steer their economies along a more sustainable path. On the surface, at least, this appears to be a positive trend. But should we instead be scratching the surface and asking whether nations have been successful in moving towards the sustainable development goal? Is it possible that we have focussed too heavily on policy measures and forgotten to supplement the means to achieving sustainable development with a suitable range of indicators to assess a nation's sustainable development performance? We could, as a consequence, be aimlessly moving along a catastrophic pathway or, as Costanza [3] describes it, be caught in a 'social trap' partly because of our current reliance on inaccurate and misleading signals.

There have, of course, been a number of indicators that have been specifically designed to measure sustainable development. A great deal more have been developed for other purposes, and have since been used to aid the assessment process. This special issue of *IJESD* contains papers on indicators from both categories. Given the questions asked above, the main aim of this issue is to provoke academics, policy makers, civil servants, and business leaders to think more seriously about:

- the importance of sustainable development indicators
- the potential value and shortcomings of the sustainable development indicators already in use
- how sustainable development indicators can be improved so as to better inform us of the impact of past policies and how future policies might be designed to avoid past failings.

The contributors to this special issue were deliberately chosen to obtain a cross-section of papers covering a range of sustainable development indicators. Each contributor is either a practitioner in the field of sustainable development indicators or has intimate knowledge of sustainable development indicators given their research and/or professional background.

In the first contributed paper, Jollands and Patterson [4] closely examine the eco-efficiency concept. They argue that the policy-guiding value of eco-efficiency indicators rests on the resolution of four theoretical issues:

- properly defining eco-efficiency
- determining what is meant by an eco-efficiency indicator
- establishing appropriate criteria for choosing suitable eco-efficiency indicators
- recognising the strengths and weaknesses of eco-efficiency indicators, particularly as they relate to policy making.

Unless these issues are adequately resolved, Jollands and Patterson believe the likelihood of the eco-efficiency concept being corrupted by poorly conceived and constructed indicators is extreme. This, they add, has the potential to condemn the eco-efficiency concept to policy oblivion.

The second of the contributed papers focuses on an Index of Sustainable Economic Welfare (ISEW) study of Thailand. According to Clarke, the point where the growth of the macroeconomy lowers economic welfare need not be confined to industrialised countries. Newly industrialising nations, such as Thailand, might also be fast approaching a welfare-declining 'threshold' of real GDP [5]. Clarke argues that the ISEW can serve the useful purpose of revealing how important it is to broaden policy prescriptions beyond the central emphasis on growth. Clarke concludes by highlighting the strengths and weaknesses of the ISEW and what is required to increase its policy appeal.

In the third contributed paper, Dietz and Neumayer take up the call for more robust indicators by critically appraising the genuine savings (GS) approach to sustainability assessments [6]. Dietz and Neumayer not only reveal some of the weaknesses inherent in GS estimates, but also show that they are meaningful only with respect to the weak sustainability paradigm. While cautioning against an uncritical interpretation of GS results, Dietz and Neumayer believe they already indicate the extent to which many resource-dependent countries are failing to invest sufficiently into suitable replacement assets.

In the fourth contributed paper, Wackernagel et al. [7] examine the policy-guiding value of the ecological footprint (EF) concept. Wackernagel et al. begin by arguing that the full spectrum of human needs is unlikely to be met in a world characterised by ecological overshoot. Following a brief explanation of how the EF is calculated, Wackernagel et al. focus on the limitations of EF estimates and respond to some of the criticisms levelled at the EF concept. Wackernagel et al. then give an interpretative account of their EF estimates in order to illustrate how the concept can guide policy makers to institute the reforms necessary to ensure ecological sustainability.

The fifth contribution from Patterson and Jollands [8] is a summary of a sustainability indicator report prepared by Patterson for the New Zealand Ministry for the Environment. After looking at the history and rationale for sustainability indicators, Patterson and Jollands put forward useful criteria for evaluating possible headline indicators of sustainability. Patterson and Jollands qualitatively evaluate the following indicators:

- the Environmental Sustainability Index
- the Ecological Footprint
- the Consumption Pressure Index
- a Living Planet Index
- Green GDP (including the Index of Sustainable Economic Welfare and the Genuine Progress Indicator).

Patterson and Jollands conclude that the Ecological Footprint and Genuine Progress Indicator are the two most potentially useful headline indicators, not only for measuring New Zealand's sustainability performance, but also presumably the performance of all nations.

The penultimate contribution involves a newly devised policy application of Fisherian income [9]. A simple formula is introduced by Lawn for calculating Australia's Fisherian income for the period 1967–1997 [10]. The empirical evidence suggests that Australia may have surpassed its optimal or sufficient macroeconomic scale in the mid-1970s. By opting not to continue the deceleration towards a steady-state economy, Lawn argues that Australia's macroinvestment policy is likely to have a detrimental long-term impact on the sustainable economic welfare enjoyed by its citizens.

Finally, John Peet focuses on the importance of 'goal-setting' when determining an appropriate set of indicators [11]. In particular, Peet places great emphasis on the issue of *need*, pointing out that needs are not just confined to individual people, but extend to communities, economies, humanity, and nature as a whole. In keeping with a holistic worldview, Peet explains why society's over-arching goal must be based on satisfying the needs of each and every interconnected system. Furthermore, Peet believes these needs must be consistent with a community-based ethic of how to best move towards the goal. According to Peet, the adoption of this approach facilitates the emergence of 'red-light' indicators that can:

- reveal a society's failure to satisfy the critical needs of each system
- indicate the need for urgent action that must be taken before attention can be directed at less critical areas of concern.

Peet's paper is a sobering reminder that many existing sustainable development indicators are incapable of determining whether the critical needs of each interconnected system are being adequately satisfied. I have deliberately left Peet's paper to the end of this special issue in the hope that each reader will be better equipped to make a judgement not only about the policy-guiding value of the sustainable development indicators discussed by the contributors, but also of sustainable development indicators generally. In all, I hope this issue broadens people's knowledge of sustainable development indicators and contributes to indicators that are both increasingly informative and policy-relevant.

Acknowledgments

I would like to thank the following people for helping me to produce this special issue of IJESD. First, all the contributors for the quality of their papers and their willingness to write a paper at short notice. Second, all paper reviewers. Third, Mohammed Dorgham, from Inderscience, who encouraged me to edit a special issue of IJESD. Finally, Peter Hills, the Executive Editor of IJESD, for offering me the role as guest editor and for assisting in the preparation of this issue.

References

- 1 World Commission on Environment and Development (WCED) (1987) *Our Common Future*, Oxford University Press, Oxford.
- 2 United Nations (1993) *Agenda 21*, UN, New York.
- 3 Costanza, R. (1987) 'Social traps and environmental policy', *BioScience*, Vol. 37, No. 6, pp.407–412.
- 4 Jollands, N. and Patterson, M. (2004) 'Four theoretical issues and a funeral: improving the policy guiding value of eco-efficiency indicators', *International Journal of Environment and Sustainable Development*, Special Issue on Sustainable Development Indicators.
- 5 Clarke, M. (2004) 'Widening development prescriptions: policy implications of an Index of Sustainable Economic Welfare (ISEW) for Thailand', *International Journal of Environment and Sustainable Development*, Special Issue on Sustainable Development Indicators.
- 6 Dietz, S. and Neumayer, E. (2004) 'Genuine savings: a critical analysis of its policy-guiding value', *International Journal of Environment and Sustainable Development*, Special Issue on Sustainable Development Indicators. Dietz and Neumayer explain why a non-declining stock of capital, or genuine savings, is a necessary but insufficient condition for ensuring sustainability.
- 7 Wackernagel, M., White, S. and Moran, D. (2004) 'Using ecological footprint accounts: from analysis to applications', *International Journal of Environment and Sustainable Development*, Special Issue on Sustainable Development Indicators.
- 8 Patterson, M. and Jollands, N. (2004) 'The power of one: developing a headline indicator for tracking progress to sustainability in New Zealand', *International Journal of Environment and Sustainable Development*, Special Issue on Sustainable Development Indicators.
- 9 Lawn, P. (2004) 'Response to 'income, investment, and sustainability'', in Mates, W.J. (Ed.): *Ecological Economics*, Vol. 48, No. 1, pp.5–7.
- 10 Lawn, P. (2004) 'Using the Fisherian concept of income to guide a nation's macro-investment policy', *International Journal of Environment and Sustainable Development*, Special Issue on Sustainable Development Indicators.
- 11 Peet, J. (2004) 'Shaping the future: indicators of need in the third millennium', *International Journal of Environment and Sustainable Development*, Special Issue on Sustainable Development Indicators.