Accounting for nature as a valuable asset

LSE research demonstrated how to value “natural capital” alongside economic assets to help ensure a sustainable future for our planet

What was the problem?

Many governments have pledged to better manage and protect vital natural resources so that future generations can continue to enjoy the economic wealth and other benefits that these resources provide.

One promising way of monitoring these pledges is by valuing and accounting for nature as a range of capital assets, commonly referred to as “natural capital”.

But what is the best way of valuing and accounting for this natural capital? Indicators that measure economic assets and wealth, including natural resources, traditionally apply a strictly quantitative approach.

However critical the numbers are, they do not tell the whole story. Such indicators often fail to reflect the non-monetary benefits of natural resources and the irreversible costs associated with their loss, or to take the future sustainability of these vital resources into account.

The challenge facing governments and organisations has been how to construct a robust appraisal and accounting system that could guide policy thinking in a more accurate and meaningful way.

What did we do?

Research focused on developing practical approaches for the valuation and monitoring of natural resources and on identifying ways to facilitate the effective application of natural capital accounting in policy-making contexts has been conducted by two academics in LSE’s Department of Geography and Environment, Professor of Environmental Policy Giles Atkinson and Associate Professor of Urban Planning Nancy Holman.

In one strand of research they established the importance of balancing technical indicators of natural resources with a wider understanding of the local political context. Funding for this research came from the European Union's 'Promoting Action for Sustainability at the Local Level in Europe' (PASTILLE) project.

They also explored the many technical challenges inherent in valuing exhaustible resources and environmental degradation and in measuring whether future generations would be properly compensated for the loss of natural capital that is occurring now.

They applied conceptual advances in the theory of sustainable development and natural capital accounting to specific contexts, such as deforestation. As well as taking into account advances in technology and population growth, they calculated the multiple benefits that forests provide which would be lost through deforestation.

What happened?

LSE research into valuing 'natural capital' has had a direct influence on environmental policies at the national and international levels.

Internationally, the World Bank commissioned Giles Atkinson in 2009 to consider the issues and challenges involved in using environmental valuation in official policy appraisals. Atkinson's report, Greening the National Accounts: Challenges and Initial Practical Steps, was disseminated by both the World Bank and the United Nations as a guide for member countries. It also fed into the UN's own application of natural capital accounting.

On the strength of this work, Atkinson was invited to join the Policy and Technical Experts Committee advising the World Bank's partnership body on wealth accounting and ecosystem evaluation, with this advice then being used to support partner countries in their own implementation of natural capital accounting.

> "…a very useful reference in helping [us to] understand different perspectives on natural capital accounting, including the role and potential for application of economic valuation within an accounting framework".
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> **UK official on Giles Atkinson's report for the World Bank, *Greening the National Accounts***

LSE research also helped to shape the City Biodiversity Index developed by the national Parks Board of Singapore on behalf of the Convention on Biological Diversity-Conference of the Parties and the United Nations Environment Program. This Index is a pioneering self-assessment and monitoring tool designed to help cities improve their efforts to conserve the diversity of plant and animal life. The Index lets cities monitor and manage their biological resources and raise citizens' awareness of biodiversity. More than 100 cities worldwide are using the full Index, and a further 334 from five countries are using an abbreviated version.

Holman was specifically involved in the development of governance indicators that are clear and adaptable to individual city circumstances. The indicators have been intentionally designed to require rival policy departments to exchange information and ideas before proceeding to measurement, thereby further embedding the issue of biodiversity into the policy-making process.

The many applications of the City Biodiversity Index bear witness to its effectiveness in being adaptable to local needs and circumstances. It has been used by city officials to set project priorities; by planners designing new cities; by schools for their biodiversity audits; and as a tool to rank progress towards environmental sustainability. Its application has extended further to partnership networks of local government, communities and businesses joining forces to provide services such as sustainable urban drainage systems.

Within the United Kingdom, Atkinson has contributed to various reviews and projects in which the Government has reconsidered its contribution to sustainable development and its approach to managing and accounting for the country's natural resources.

As one example, Atkinson was asked to assess the UK Government's current approach to sustainability for a Government Economic Service Working Group looking at the economics of sustainable development. Basing his recommendations on LSE's research findings, Atkinson proposed revising the test of sustainable development in the impact assessment required of all UK policy makers when proposing policy changes.

In particular, he recommended incorporating an asset check to keep track of key environmental assets and to require policy makers to consider the likely impact of policy changes on natural capital. This proposal featured prominently in the Working Group's own recommendations and in the Natural Environment White Paper published in 2011 by the Department for Environment, Food and Rural Affairs (Defra). Atkinson was then involved in further research projects to define what an asset check might entail, and to explore what focusing on natural capital adds to conventional ecosystem assessments.

Defra's White Paper of 2011 led to the creation of a Natural Capital Committee whose remit was to advise the Government on whether England's natural resources were being used sustainably and on priority actions to address any identified problems. Appointed to this Committee in May 2012, Atkinson co-led its work on improving accounting for natural resources. In July 2012, the Office for National Statistics began consulting on how to include the full value of natural capital in the UK Environmental Accounts by 2020.

Giles Atkinson is Professor of Environmental Policy at LSE. An environmental economist by training, Giles's research interests cover a number of aspects of environmental policy and appraisal. In particular, Giles has published extensively on the subject of sustainable development. Much of this research has examined how policy-makers might construct better measures of economic progress through 'green accounting', particularly comprehensive measures of (genuine) saving. Giles is currently a member of the UK Natural Capital Committee (NCC), an independent body advising HM Government on sustainable use of natural capital. He is also a member of the following advisory groups: the Policy and Technical Experts Committee (PTEC) for the World Bank's WAVES partnership (Wealth Accounting and the Valuation of Ecosystem Services); the Steering Group for the Natural Capital Accounting Project of the ONS (UK Office for National Statistics); and, the Advisory Board for TEEB (The Economics of Ecosystems and Biodiversity).

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Dr Nancy Holman joined the Department of Geography & Environment in August 2008, where she is now an Associate Professor of Urban Planning. A planner by training, she has a PhD in Urban Policy (University of Portsmouth, 1999) and an MSc in Community and Regional Planning (University of Texas, 1996). Her work deals primarily with issues of governance and local planning including sustainable development and community participation. She has often used social network analysis to explore the complex relationships in the multi-level, multi-actor partnerships present in modern governing arrangements.

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