

BOOK REVIEWS

Potschin, M.; Haines-Young, R.; Fish, R. and Turner, R.K. (Editors). 2016. Routledge Handbook of Ecosystem Services. xxvii+629 pages. Routledge, Taylor & Francis Group, London. ISBN: 978-1-138-02508-0 (Hardcover).

The notion of 'nature's services' was presented in 1970 to express a utilitarian view of nature in order to raise people's interest in natural environment. Later, the term 'ecosystem services', proposed in 1981, received wide acceptance after Daily (1997) defined it as "*the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfill human life*". The concept of ecosystem services, however, became a buzzword soon after the Millennium Ecosystem Assessment (2005) defined them simply as "the direct and indirect benefits derived by humans from the functions of the ecosystems". The concept of ecosystem services (ES) got further boost with the launch of a programme named 'The Economics of Ecosystems and Biodiversity (TEEB) in 2010' and the UNEP establishing in 2012 an 'Intergovernmental Platform on Biodiversity and Ecosystem Services' (IPBES). During the past decade or so, thousands of publications have appeared on the subject and a new journal with same name has also been launched. The concept is gradually reaching the decision makers and has started receiving mention in various policies.

It is therefore only appropriate that this bulk of knowledge in this rapidly expanding field is synthesised, summarised and presented in a single volume. The Handbook of Ecosystem Services published by Routledge is a timely and comprehensive reference and guide to the current state of our understanding of the science and its application. The Handbook, edited by leading exponents of the concept, includes besides an introduction, 51 articles grouped into five parts, contributed by 157 experts and researchers most of whom are well known for their work in the field. Each part begins with its own introduction and lists a few key discussion and debating points. Another important feature of the Handbook are additional, usually short contributions related to the theme of various articles, placed within them as one or two 'Briefing Notes'.

The introduction by the editors covers a brief history of the concept, current debates on its mainstreaming and operationalisation, and future. They point out 'the need for elaborate narratives of ecosystem services and natural capital to emphasise people's rights and responsibilities' but also that with increasing urbanisation, 'the story of ecosystem services perhaps has to be retold as a partnership between people and nature'.

Part I (concepts and frameworks) with 9 articles which deal with the theoretical aspects, definition and measurement, links with biodiversity, ecosystem structure and function, socio-ecological perspectives, drivers of change, and aspects of economic valuation and its importance to environmental management.

Part II is devoted to methods and techniques relevant for decision making. Assessment of ES, their modelling, indicators, mapping (including use of remote sensing), accounting, and economic valuation are major topics covered in the 14 articles in this part. Two important contributions discuss stakeholder participation in decision making, and deliberative and non-monetary methods of valuation. Issue of justice and ethics are discussed in two briefing notes.

Part III (12 articles) is devoted largely to the ecosystem services of major ecosystems namely, marine and coastal, freshwater, forests, drylands, grasslands, cultivated lands (agroecosystems) and urban ecosystems. ES provided by soil biota are discussed in another article. Three articles discuss the management of provisioning, regulating and cultural services.

Part IV (13 articles) concerns with the challenge of mainstreaming an ES perspective into various sectoral policies and decision making. Various articles discuss the linkages between ES and issues of climate change mitigation and adaptation, food security, water security, health, poverty alleviation, business, and landscape planning. While the mainstreaming of ES into divergent sectors may indeed be challenging, it is important that the nexus between various sectors is highlighted as is being discussed currently in the context of sustainable development goals (SDGs). Another article in this part offers insights into market-based mechanism for delivering ES (Payment for Ecosystem Services) whereas the last two articles discuss the institutional aspects and the use of ES knowledge in policy making.

Part V with three articles examines the relationship between ES and sustainability, and the future of this emergent challenging discipline.

This Handbook presents an excellent integration of available knowledge about the concept and its application, brings together natural and social sciences. The ecosystem service paradigm highlights the relationships between people and nature and provides a new dimension to policy making and conflict resolution for sustainable development. The Handbook deserves attention from all policy-makers and natural resource managers besides researchers in ecology, environment, ecological economics and related areas.

Daily, G.C. 1997. Introduction: What are ecosystem services. Pages 1-10, In: Daily, G.C. (Editor) *Nature's Services: Societal Dependence on Natural Ecosystems*. Island Press, Washington, DC.

MEA (Millennium Ecosystem Assessment). 2005. *Ecosystems and Human Well-Being: Synthesis*. Island Press, Washington, DC. 155 pages.

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