

Handbook On The Economics Of Ecosystem Services And Biodiversity

Paulo A.L.D. Nunes , Pushpam Kumar , Tom Dedeurwaerdere

Edited by Paulo A.L.D. Nunes, Scientific Coordinator, Policy and Technical Experts Committee, WAVES – Wealth Accounting and Valuation of Ecosystem Services, The World Bank, US, Pushpam Kumar, Chief, Ecosystem Services Economics Unit, United Nations Environment Programme (UNEP), Kenya and Tom Dedeurwaerdere, Professor, Université catholique de Louvain (UCL), Belgium and Senior Research Associate, National Research Foundation (F.R.S.-FNRS), Belgium

2014 608 pp Hardback 978 1 78195 150 7

ebook isbn 978 1 78195 151 4

Description

In recent years, there has been a marked proliferation in the literature on economic approaches to ecosystem management, which has created a subsequent need for real understanding of the scope and the limits of the economic approaches to ecosystems and biodiversity. Within this Handbook, carefully commissioned original contributions from acknowledged experts in the field address the new concepts and their applications, identify knowledge gaps and provide authoritative recommendations.

Contributors: P. Ala-aho, I. Anastasiou, J. Angulo-Valdés, V. Babalos, T. Badura, K.J. Bagstad, H.E. Balbach, E.B. Barbier, A.A. Batabyal, A. Bien, L.M. Brander, A. Catzim-Sanchez, H. Chen, W.W.L. Cheung, J.C. Cooper, J. Coria, G. Cucuzza, A.T. de Blaeij, T. Dedeurwaerdere, M. De Salvo, S. Di Falco, S.T.M. Dissanayake, A.K. Duraiappah, W.H. Durham, R. Eskelinen, T. Figueredo Martín, P. Fong, M. Gemma, J.M. Gowdy, M. Honey, G.W. Johnson, T. Karjalainen, M. Kettunen, B. Klöve, E. Kougea, P. Koundouri, P. Kumar, V.W.Y. Lam, G.-M. Lange, V. Linderhof, A. Markandya, J. Maté, L. Mazza, C. Mena, Y. Mitani, E. Naikal, D. Narita, S. Navrud, P. Nijkamp, P.A.L.D. Nunes, H. Önal, R.R. Palatnik, C. Palmer, S. Parks, M. Pascual, M. Pérez-Soba, F. Pina-Amargós, N.B.P. Polman, L. Pratt, M. Pulido-Velazquez, M.J. Punt, D. Quiroga, K. Rehdanz, S. Reinhard, K. Reinikainen, E. Robinson, P.M. Rossi, G. Samonte, A. Seidl, D. Semmens, M. Shechter, B. Shitovitz, G. Signorello, R.D. Simpson, G. Slean, H.G. Smith, R.B.W. Smith, T. Sterner, M. Stithou, U.R. Sumaila, D. Suman, R.T. Tawfik, P. ten Brink, R.S.J. Tol, R.K. Turner, M. van der Heide, E.C. van Ierland, P. Verweij, F. Villa, S. Waage, X. Wang, H.-P. Weikard, J.D. Westervelt, M. Winograd, S. Withana, S. Zemah-Shamir

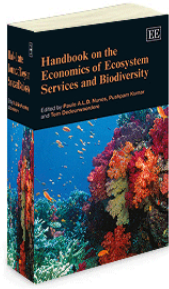


Table of Contents

Introduction

Paulo A.L.D. Nunes, Pushpam Kumar and Tom Dedeurwaerdere

PART I: SETTING THE SCENE: THE NEED FOR ECOSYSTEM SERVICE VALUATION

1. Comprehensive Wealth Accounting: Measuring Sustainable Development
Glenn-Marie Lange and Esther Naikal

2. The Protective Value of Estuarine and Coastal Ecosystems
Edward B. Barbier

3. Cruising for a Bruising: Challenges in Sustainable Capture of Ecosystem Service Values from Cruise Ship Tourism in Belize
Andrew Seidl, Lawrence Pratt, Martha Honey, William H. Durham, Geraldine Slean and Amos Bien

4. Climate Change Effects on the Economics and Management of Marine Fisheries
U. Rashid Sumaila, William W.L. Cheung and Vicky W. Y. Lam

5. The Economic Impacts of Ocean Acidification
Luke M. Brander, Daiju Narita, Katrin Rehdanz and Richard S.J. Tol

6. Estimating the Welfare Loss of Climate Change Impact on Corals
Pushpam Kumar and Hongyan Chen

PART II: EMERGING ECONOMIC VALUATION METHODS, INCLUDING THE USE OF DELIBERATIVE, MACRO AND SPATIALLY EXPLICIT ECONOMIC VALUATION

7. The Behavioral Argument for an Expanded Valuation Framework for Biodiversity and Ecosystem Services
John M. Gowdy and Sarah Parks

8. Valuing Ecosystem Services in Macroeconomic Setting
Rodney B.W. Smith and Masahiko Gemma

9. Exploring the Use of a Macro-micro-based Approach to Value Biodiversity Productivity Impacts on the Agricultural Sector
Ruslana Rachel Palatnik and Paulo A.L.D. Nunes

10. Quantifying and Valuing Ecosystem Services: An Application of ARIES to the San Pedro River Basin, USA
Kenneth J. Bagstad, Darius Semmens, Ferdinando Villa and Gary W. Johnson

11. Optimal Selection of Clustered Conservation Lands Using Integer Programming: The Case of Fort Stewart in Georgia, USA
Sahan T.M. Dissanayake, Hayri Önal, James D. Westervelt and Harold E. Balbach

12. QUICKScan: A Pragmatic Approach for Decision Support in Ecosystem Services Assessment and Management

Manuel Winograd, Marta Pérez-Soba, Peter Verweij

PART III: ECOSYSTEM SERVICES AND CONSERVATION POLICY

13. Ecosystem Service Valuation and the Allocation of Land

R. David Simpson

14. Biodiversity Prospecting Over Time and Under Uncertainty: A Theory of Sorts
Amitrajeet A. Batabyal and Peter Nijkamp

15. Game Theory and Marine Protected Areas: the Effects of Conservation Autarky in a Multiple Use Environment

Maarten J. Punt, Hans-Peter Weikard and Ekko C. van Ierland

16. The Valuation of Ecosystem Services and Their Role in Decision-making: Constraints and Ways Forward

Anil Markandya and Marta Pascual

17. Optimal Species Preservation Policy in a Symbiotic Relationship between Species

Shiri Zemah-Shamir, Benyamin Shitovitz and Mordechai Shechter

18. Biodiversity, Poverty and Development

Charles Palmer and Salvatore Di Falco

19. Biodiversity Conservation and Ecosystem Services Provision: A Tale of Confused Objectives, Multiple Market Failures and Policy Challenges

Jessica Coria, Elizabeth Robinson, Henrik G. Smith and Thomas Sterner

PART IV: SHEDDING LIGHT ON NON-MARKET VALUES OF ECOSYSTEM SERVICES

20. A Choice Experiment to Value the Recreational Benefits of Coral Reefs: A Case Study of Ras Mohammed National Park, Egypt

Rady T. Tawfik and R. Kerry Turner

21. Using Ecological Information in Choice Experiments to Value Ecosystem Services Restoration Programs in East Asia

Yohei Mitani and Ståle Navrud

22. A One and One Half Bound Contingent Valuation Survey to Estimate the Benefits of Restoring a Degraded Coastal Wetland Ecosystem: The Case Study of Capo Feto

Giovanni Signorello, Joseph C. Cooper, Giuseppe Cucuzza and Maria De Salvo

23. A Micro-Econometric Approach to Deriving Use and Non-Use Values of in situ Groundwater: The Vosvozis Case Study, Greece

Phoebe Koundouri, Vassilis Babalos, Mavra Stithou and Ioannis Anastasiou

24. The Economic Feasibility of the Creation of the Jardines de la Reina National Park

Tamara Figueredo Martín, Fabián Pina Amargós and Jorge Angulo Valdés

25. Valuation of Ecosystem Services Provided by Man-made Wetlands

Nico B.P. Polman, Arianne T. de Blaeij, Martijn van der Heide, Vincent Linderhof and Stijn Reinhard

26. The Contribution of Non-Use Values to Inform the Management of Groundwater Systems: The Rokua Esker, Northern Finland

Phoebe Koundouri, Mavra Stithou, Eva Kougea, Pertti Ala-aho, Riko Eskelinen, Timo Karjalainen, Bjorn Klove, Manuel Pulido-Velazquez, Kalle Reinikainen and Pekka M. Rossi

PART V: THE ROLE OF GOVERNANCE AND SCIENCE-POLICY-BUSINESS INTERFACE IN BRINGING VISIBLE ECOSYSTEM VALUES

27. Governance is Critical to Managing Coastal and Marine Resources: Effects of Marine Management Areas

Giselle Samonte, Daniel Suman, Juan Maté, Diego Quiroga, Carlos Mena, Adele Catzim-Sanchez, Patrick Fong and Xuanwen Wang

28. Strengthening the Science-Policy Interface: Lessons from the Intergovernmental Platform on Biodiversity and Ecosystem Services

Anantha Kumar Duraiappah

29. Governance of the Transition to a Green Economy – Responding to the Values of Nature

Patrick ten Brink, Leonardo Mazza, Tomáš Badura, Marianne Kettunen and Sirini Withana

30. New Business Decision-Making Aids in an Era of Complexity, Scrutiny, and Uncertainty: Tools for Identifying, Assessing, and Valuing Ecosystem Services

Sissel Waage

Index