

Jan Evangelista Purkyně University in Ústí nad Labem

Faculty of Environment

Study material

METHODS OF VALUATION OF NATURE'S FUNCTIONS AND
SERVICES

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EUROPEAN UNION
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Operational Programme Research,
Development and Education



STUVIN - Education, research and innovation of science and technical doctoral programmes
on J. E. Purkyně University in Ústí n.L., reg. n. CZ.02.2.69/0.0/0.0/16_018/0002735

Objectives

Mastering transdisciplinary methods of evaluating non-market functions and services of ecosystems, based on a combination of the broad economic value of biosphere ecosystems and the thermodynamic nature of life. The course combines knowledge of ecological economics, the latest developments in theories of economic value of ecosystems and nonequilibrium thermodynamics of the functioning of life. The aim is to develop methods of real interconnection of economic systems with the possibilities, limits and needs of restoration of natural ecosystems to restore the healthy functioning of the biosphere at the local, regional and global levels.

Study topics

1. Life and ecosystems in the biosphere as a manifestation of the second law of thermodynamics
2. National economies, globalization and their impacts on the quality and health of nature
3. Limits of theories of economic value, methods of nature evaluation and conditions of sustainability
4. Methods of nature assessment for real integration of economic activities with the restoration of the natural capital

Study literature

Mandatory literature

COSTANZA, R.; DE GROOT, R.; BRAAT, L.; KUBISZEWSKI, I.; FIORAMONTI, L.; SUTTON P.; FARBER S.;

GRASSO, M.; Twenty years of ecosystem services: How far have we come and how far do we still need to go? *Ecosystem Services* 2017, 28, 1-16.

SEJÁK J. 2014 *Sustainable Environmental and Natural Resource Economics*, FŽP UJEP, ISBN 978-80-7414-877-4.

SCHNEIDER, E.D.; SAGAN, D. *Into the Cool, Energy Flow, Thermodynamics, and Life*, 1st ed.; The University of Chicago Press: Chicago, U.S.A., 2005; 0-226-73936-8.

Expanding literature

DALY, H.; FARLEY, J. *Ecological Economics, Principles and Applications*. 2nd ed.; Island Press, Washington, Covelo, London. 2011; ISBN 13: 978-1-59726-681-9; ISBN 10: 1-59726-681-7.

Recommended literature

COSTANZA, R., DE GROOT, R., SUTTON, P., VAN DER PLOEG, S., ANDERSON, S. J., KUBISZEWSKI, I., FARBER, S., TURNER, R. K., 2014. Changes in the global value of ecosystem services. *GLOBAL ENVIRON CHANG* 26 (2014): 152–158.

SAGOFF M., *The Rise and Fall of Ecological Economics*, 2012. Available online: <https://thebreakthrough.org/index.php/journal/past-issues/issue-2/the-rise-and-fall-of-ecological-economics> (accessed 12 April, 2018).