

Course Title: Environmental Economics
Total Credit: 4

This course delves on the environmental issues confronting the societies and economies. After discussing fundamental concepts underpinning environmental economics, the course discusses the common causes of market failure in case of environmental goods. The economic instruments at the disposal of the policymakers to deal with market failure, especially for controlling pollution are examined. Students learn the theoretical underpinning of these policy instruments, and also analyze their real-world applications through case studies. Further, the theories and application of the methods used for valuing environmental goods are explored. The course also covers matters related to trade and environment. Finally, the students engage with the idea of sustainable development and how to operationalize it. Students who opt for this course are encouraged to have prior knowledge of calculus, intermediate level microeconomics and basic econometrics.

Evaluation: Book/article review (20%), Mid-term (40%) and End-term (40%). Students will have to write an exam for both mid-term and end-term evaluations.

Content and readings¹:

1. Introduction to Environmental Economics

Ecology, environment and economy; economy and environment interlinkages; laws of thermodynamics; environment and development trade-off; environmental economics: why a separate branch?; magnitude of some major environmental problems confronting the world; overview of environmental regulations in the USA, EU, Russia and South Asia; poverty and environment

Readings:

Dasgupta et al. (2005): Where is the Poverty- Environment Nexus? Evidence from Cambodia, Lao PDR and Vietnam, World Development, Vol. 33, No.4 , pp. 617-638

Fullerton, D and R N Stavins (1998): How do Economists Really Think about the Environment? Discussion paper 98-29, Belfer Center for Science and International Affairs, Publications, 79 JFK Street, Cambridge

Hanley N., J. F. Shogren, B. White (2006): Economy Environment Interactions (Chapter 1), *Environmental Economics in Theory and Practice*, Red Globe Press

Kolstad, C D (2003): Environmental Economics, Chapters 1 and 2, Oxford University Press, New York

¹ The list of readings is tentative. New readings may be added as the course progresses.

2. Market Failure

Public goods and externality; internalizations of externality: tax, property right and Coase theorem; externality in the use of Common Property Resources (CPR), management of CPR

Readings:

Baumol, J W and W E Oates (1988): *The Theory of Environmental Policy*, Cambridge University Press

Baumol, J W and W E Oates (1971): The Use of Standards and Prices for Protection of the Environment, *The Swedish Journal of Economics*, Vol. 73, No. 1, Environmental Economics, pp. 42-54

Kolstad, C D (2003): *Environmental Economics*, Chapter 6, Oxford University Press, New York

Laura McCann et al. (2005): Transaction Costs Measurement for Evaluating Environmental Policies, *Ecological Economics*, 52 (4), pp. 527-542

Elinor Ostrom (2000): Collective Action and the Evolution of Social Norms, *Journal of Economic Perspective*, Vol. 14, No. 3, pp.137-158

Elinor Ostrom (2009): *Beyond Markets and States: Polycentric Governance of Complex Economic Systems* (Ostrom's prize lecture)

Sethi, R and E Somanathan (1996); The Evolution of Social Norms in Common property Resource Use, *American Economic Review*, Vol. 86, No. 4, pp. 766-788

Tietenberg, T and L Lewis (2018): Chapter 2, *Environmental and Natural Resource Economics*, 11th Edition, Routledge: New York and London

3. Valuation of Environmental Goods

Use and non-use values, stated and revealed preference methods: theory and applications

Readings:

Chopra, K (2004): Economic Valuation of Biodiversity: The case of Keoladeo National Park in Gopal K Kadekodi (ed) *Environmental economics in practice : case studies from India*, Oxford University Press: New Delhi

Hanley N., J. F. Shogren, B. White (2006): Theory and Methods for Environmental Valuation (Chapter 11), *Environmental Economics in Theory and Practice*, Red Globe Press

Haque, A, M N Murty and P Shyamsundar (2011): Environmental Valuation: A Review of Methods in Haque et al (eds) *Environmental Valuation in South Asia*, Cambridge University Press: New Delhi

Jain, S, S Kumar and Paramjit (2015): Valuation of Environmental Benefits in Asian Countries in Shunsuke Managi (ed) *The Routledge Handbook of Environmental Economics in Asia*, Routledge: London and New York

Mandal, R et al. (2018): Towards an Optimum Mobilization of Resources for Conservation of an Environmental Amenity: A case Study of Kaziranga National Park, India, *International Journal of Ecological Economics and Statistics*, Vol. 39, No. 2, pp. 19-33

Vincent J R (2011): Valuing the Environment as a Production Input in Haque et al (eds) *Environmental Valuation in South Asia*, Cambridge University Press: New Delhi

4. Pollution Control Measures

Command and control measures and incentive-based instruments: mechanism and limitations

Readings:

Betz, R (2015): Emissions Trading in Practice: Lessons Learnt from the European Emission Trading Scheme in *The Routledge Handbook of Environmental Economics in Asia* (ed.) Shunsuke Managi, pp. 182-206 Routledge: New York.

Hanley N., J. F. Shogren, B. White (2006): Chapters 4 and 5, *Environmental Economics in Theory and Practice*, Red Globe Press

Jing Cao (2015): Environmental Taxes: Practice in *The Routledge Handbook of Environmental Economics in Asia* (ed.) Shunsuke Managi, pp. 122-134 Routledge: New York.

Kolstad, C D (2003): *Environmental Economics*, Chapters 7,8,9 and 10, Oxford University Press, New York

Maeda, A (2015): Theory of Emissions Trading and Taxation in *The Routledge Handbook of Environmental Economics in Asia* (ed.) Shunsuke Managi, pp. 157-182, Routledge: New York.

Malik, A S (2002): Further Results on Permit Markets with Market Power and Cheating, *Journal of Environmental Economics and Management*, 44, pp. 371-390

Perman, R et al. (2011): Chapter 6, *Natural Resource and Environmental Economics*, Pearson: England

Schmalensee, R and R N Stavins (2017): The Design of Environmental Markets: What Have We Learned from Experience with Cap and Trade, *Oxford Review of Economic Policy*, Vol. 33, No. 4

Stavins, R N (1995): Transaction Costs and Tradeable Permits, *Journal of Environmental Economics and Management*, 29, pp. 133-148

5. Trade and Environment

Decomposition of the impacts of trade liberalization on environment; environment as a source of comparative advantage; pollution heaven hypothesis, free trade and natural resource depletion, political economy of trade and environmental policy, trade and environment: a southern perspective

Readings:

Mehra, M K (2009): Trade, Environment and Natural Resources: A Developing Country Perspective in Handbook of Environmental Economic in India (eds.) K Chopra and V Dayal, Oxford University Press: New Delhi

Muradian, R and J M-Alier (2001): Trade and the Environment: from a 'Southern' Perspective, *Ecological Economics*, 36, pp. 281-297

Kolstad, C D (2003): *Environmental Economics*, Chapter 13, Oxford University Press, New York

World Trade Organization (2004): Trade and Environment at the WTO, available at https://www.wto.org/english/tratop_e/envir_e/envir_wto2004_e.pdf

6. Climate change, growth, and development

Causes and consequences of climate change, economics of climate change, global response to climate change, degrowth vs a green deal

Nicholas Stern (2006). "What is Economics of Climate Change", *World Economics*, 7(2): 1-10.

William Nordhaus (2007). "A Review of the Stern Review on the Economics of Climate Change", *Journal of Economic Literature*, 45(3): 686-702.

Robert Pollin (2019): Advancing a Viable Global Climate Stabilization Project: Degrowth versus the Green New Deal, *Review of Radical Political Economics*, 51(2):311-319.

Juliet B. Schor and Andrew K. Jorgenson (2019): "Is it Too Late for Growth?", *Review of Radical Political Economics*, 51(2):320-329.

7. Sustainable Development

Idea, measurement and policy

Readings:

Hanley N., J. F. Shogren, B. White (2006): Chapter 2, *Environmental Economics in Theory and Practice*, Red Globe Press

Dietz, S and E Neumayer (2007): Weak and Strong Sustainability in the SEEA: Concepts and Measurement, *Ecological Economics*, 61, pp. 617-626

Perman, R et al. (2011): Chapter 2, *Natural Resource and Environmental Economics*, Pearson: England

Rennings, K and H Wiggering (1997): Steps Towards Indicators of Sustainable Development: Linking Economic and Ecological Concepts, *Ecological Economics*, 20, pp. 25-36

Solow, R M (1991): Sustainability: An Economist's Perspective, Eighteenth J S J Lecture