

Master EPP - ECO 58518: Environmental economics and sustainable development

J.-M. Bourgeon

This course explores some of the most important areas of environmental economics and economic issues of sustainable development in a framework that comprises economic growth, trade and uncertainty. Special emphasis is given to sustainable use of natural resources, global pollution problems and decision making with irreversibility. It gives the rationale of regulations, tax, and more generally explains the role of the state in mitigating the negative consequences of market failures.

Schedule of classes

- Week 1 Introduction to environmental economics and sustainable development.
- Week 2 Economic growth and the Environmental Kuznets Curve
- Week 3 Incentive design of environmental regulations
- Week 4 Information asymmetry and regulations
- Week 5 Monitoring and the enforcement of regulations
- Week 6 Trade and the environment - Non strategic and strategic trade
- Week 7 North-South trade & the environment
- Week 8 Trade and natural resources
- Week 9 Transboundary pollution & International Environmental Agreements
- Week 10 Environmental risk & CBA
- Week 11 Green growth & directed technical change
- Week 12 Economics of biodiversity

Selected books:

- R Perman, Y Ma, J McGilvray & MS Common, (2003), Natural resource and environmental economics, (third ed), Pearson Education, Harlow.
- Hanley, N., Shogren, J. F., & B. White (2007). Environmental economics in theory and practice. Oxford university press, New York.
- Copeland, B. & S. Taylor (2003), Trade and the Environment: Theory and Evidence, Princeton University Press.

Detailed bibliography

Economic growth and the Environmental Kuznets Curve:
Chapter 3 of Copeland, B. and S. Taylor (2003).

Incentive design of environmental regulations

- Chapters 4 & 5 of Hanley, N., Shogren, J. F., & B. White (2007).
- Chapters 6 & 7 of R Perman, Y Ma, J McGilvray & MS Common, (2003).
- M. Weitzman, (1977), Is the Price System or Rationing More Effective in Getting a Commodity to Those Who Need It Most?, Bell Journal of Economics.
- Requate, T. & W. Unold (2003), Environmental policy incentives to adopt advanced abatement technology: Will the true ranking please stand up?, European Economic Review.

Information asymmetry and regulations

- J-J. Laffont & D. Martimort (2001), The Theory of Incentives: The Principal-Agent Model, Princeton University Press.
- R. Chambers (2002), Information, incentives, and the design of agricultural policies

in Handbook of Agricultural Economics, vol 2.

P. Bontems & J.-M. Bourgeon (2000), Creating countervailing incentives through the choice of instruments, *Journal of Public Economics*, Vol. 76(2), pp. 181-202.

Monitoring and the enforcement of regulations

Polinsky & Shavell (2001), The Economic Theory of Public Enforcement of Law, *Journal of Economic Literature*, Vol. 38, No. 1, pp. 45-76.

J-J. Laffont & D. Martimort (2001), *The Theory of Incentives: The Principal-Agent Model*, Princeton University Press.

Y. Hirriart & D. Martimort (2006), The Benefits of Extended Liability, *RAND Journal of Economics*, Vol. 37, No. 3, pp. 562-582

D. Mookherjee & I. P. L. Png (1994), Marginal Deterrence in Enforcement of Law, *The Journal of Political Economy*, Vol. 102, No. 5, pp. 1039-1066

Trade and the environment - Non strategic and strategic trade

Helpman & Krugman (1989), *Trade policy and market structure*, Cambridge: MIT Press.

A. Ulph (1997), Environmental policy and International Trade, in Carraro, C., & D. Siniscalco, *New directions in the economic theory of the environment*, Cambridge University Press.

S. Barrett, (1994), Strategic Environmental Policy and International Trade, *Journal of Public Economics*; 54 (3), 325-38.

Brander, J. & B. Spencer (1985), Export subsidies and International market share rivalry, *Journal of international Economics*, 18, 83-100.

Eaton, J. & G. Grossman (1986), Optimal Trade and Industrial Policy under Oligopoly, *Quarterly Journal of Economics*, 101(2): 383-406.

North-South trade & the environment

Copeland, B. & S. Taylor (2003). *Trade and the Environment: Theory and Evidence*, Princeton University Press.

Copeland, B. & S. Taylor (2004), Trade, growth and the environment, *Journal of Economic Literature*, 42: 7-71.

Trade and natural resources

Bulte, E. & E. Barbier (2005), Trade and Renewable Resources in a Second Best World: An Overview, *Environmental and Resource Economics*, vol. 30(4): 423-463.

Copeland, B., & S. Taylor (2009), Trade, Tragedy, and the Commons, *American Economic Review*, vol. 99(3): 725-49.

Brander, J., & S. Taylor (1997), International Trade and Open-Access Renewable Resources: The Small Open Economy Case, *Canadian Journal of Economics*, vol. 30(3): 526-52.

Brander, J., & S. Taylor (1997), International trade between consumer and conservationist countries, *Resource and Energy Economics*, vol. 19(4): 267-297,

Transboundary pollution & International Environmental Agreements

Barrett, S. (1994), Self-Enforcing International Environmental Agreements, *Oxford Economic Papers*, vol. 46: 804-878.

Barrett, S. (2005), The Theory of International Environmental Agreements, in K.-G. Mäler and J. Vincent (eds.), *Handbook of Environmental Economics*, Vol. 3, pp. 1457-1516.

Finus, M (2003), Stability and Design of International Environmental Agreements: The Case of Transboundary Pollution, *International Yearbook of Environmental and Resource Economics 2003/4* (Folmer, H and Tietenberg, T (eds.), Edward Elgar, ch. 3:82-158.

Copeland, B. & Taylor, S. (2005), Free trade and global warming: a trade theory view of the Kyoto protocol, *Journal of Environmental Economics and Management*, 49(2): 205-234.

Environmental risk & Cost-Benefit Analysis

Eeckhoudt, L., Gollier, C. & H. Schlesinger (2005), *Economic and Financial Decisions under Risk*, Princeton University Press.

Dixit, A. & R. Pindyck (1994), *Investment under Uncertainty*, Princeton University Press.

Gollier, C. (2007), Comment intégrer le risque dans le calcul économique ?, *Revue d'Economie Politique*, 117 (2): 209-223.

Gollier, C. & J.-G. De-vezeaux (2001), Analyse quantitative de la réversibilité du stockage des déchets nucléaires: Valorisation des déchets, *Economie et Prévision*, 149: 1-13.

Green growth & directed technical change

Chapter 5 of Aghion, P, and P. Howitt (1998), *Endogenous growth theory*, MIT Press.

Chapter 15 of D. Acemoglu (2009), *Introduction to modern economic growth*, Princeton University Press.

Nancy L. Stokey, "Are There Limits to Growth?", *International Economic Review*, 1998, 39(1), pp. 1-31.

Acemoglu, D, Aghion, P, Bursztyn, L & D. Hemous (2010), *The Environment and Directed Technical Change*, WP, Fondazione Eni Enrico Mattei.

Economics of biodiversity

S. Polasky, C. Costello & A. Solow (2005), *The economics of biodiversity*, Chapter 29 of *Handbook of Environmental Economics*, Volume 3.

G. Rausser, & A. Small (2000), *Valuing Research Leads: Bioprospecting and the Conservation of Genetic Resources*, *Journal of Political Economy*, 108(1), 173-206.

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Weitzman, M.L. (1992), *On diversity*, *Quarterly Journal of Economics* 107(2), 263-405.

Weitzman, M.L. (1998), *The Noah's ark problem*, *Econometrica*, 66(6), 1279-1298.

Weitzman, M.L. (2000), *Economic Profitability versus Ecological Entropy*, *Quarterly Journal of Economics* 115(1), 237-263.