

# ECO5052S NATURAL RESOURCE ECONOMICS 2008 MASTERS

## **Lecturers:**

Module A (Week 1-6):

Edwin Muchapondwa, Room 4.63.1 Ext 5242 email: edwin.muchapondwa@uct.ac.za

Module B (Week 7-12):

Martine Visser, Room 6.51 Ext 5241 email: martine.visser@uct.ac.za

The course will consist of a mixture of lectures, readings, seminars and practical/problem solving sessions. You will be required to write a **term paper** making use of the tools learnt in the course. There will be a two-hour exam at the end of the course.

Prescribed textbook: Perman, R., Ma, Y., McGilvary, J. and M. Common (2003). Natural Resource and Environmental Economics, 3rd Edition, Prentice Hall, UK. The reading will be supplemented by additional papers.

Exam: 55%

Problem sets: 20%

Term Paper: 25%

Structure of the course: There will be lectures on Tuesdays (2-3.45pm). You will use Thursdays (2-3.45pm) for your reading and problem solving.

## **Module A: Week 1-6: Edwin Muchapondwa**

### ***An Introduction to the Economics of Non-renewable and Renewable Resources***

General readings:

- Perman, R., Ma, Y., McGilvary, J. and M. Common (2003). Natural Resource and Environmental Economics, 3rd Edition, Prentice Hall, UK. (Chapters 14,15,17,18)
- Fischer, A.C. (1981). Resource and Environmental Economics Cambridge: Cambridge University Press, UK. (Chapter 2);
- Hanley, N., Shogren, J. and B. White, (1997). Environmental Economics in Theory and Practice, London: Macmillan, UK. (Chapter 11)

#### ***Week 1: An economic analysis of non-renewable resources***

Readings: Solow, R. (1974). "The economics of resources or the resources of economics", The American Economic Review Vol 64(2) pages 1-14 and Hotelling, H. (1931). "The Economics of Exhaustible Resources", The Journal of Political Economy, Vol. 39(2) pp137-175.

#### ***Week 2: An economic analysis of renewable resources***

Reading: Weitzman (JEEM 43(2) march 2002 p325-338. Fowler (ICES 1999p927-932). Edwards et al (ecological economics 2004 p317-329).

- **Hand-in Problem set 1**

***Week 3: The economics of fisheries***

Reading: H. Scott Gordon, H.S. (1954). "The Economic Theory of a Common-Property Resource: The Fishery" *The Journal of Political Economy*, Vol. 62, No. 2. (April), pp. 124-142.

***Week 4: The economics of forestry exploitation***

Reading: Hyde, W.F., Amacher, G.S. and W. Magrath (1996). Deforestation and forest use: Theory, evidence and policy implications", *The World Bank Research Observer* vol 11 No 2 (August) pp. 223-248.

- **Hand-in Problem set 2**

***Week 5: Presentation and Analysis of Applied Papers***

Reading: Akpalu, W. and P.J. Parks, 2007. "Natural Resource Use Conflict: Goldmining in Tropical Rainforest in Ghana," *Environment and Development Economics* 12(1): 1-18.

***Week 6: Presentation and Analysis of Applied Papers***

Reading: Parks, P..J and Bonifaz, 1994. "Non-sustainable use of Renewable Resources: Mangrove Deforestation and Mariculture in Ecuador" *Marine Resource Economics* 9(1):1-18

## ***Module B: Week 7-12: Martine Visser***

### ***Behavioural and Experimental Approaches to understanding the Environment***

#### ***General Readings:***

- Perman, R., Ma, Y., McGilvary, J. and M. Common (2003). Natural Resource and Environmental Economics, 3rd Edition, Prentice Hall, UK.
- Shogren, J. (2003) Experiments in Environmental Economics Vol I & I. University of Wyoming, USA.
- Sterner, T. (2003) Policy Instruments for Environmental and Natural Resource Management. RFF Press. Washington.

*(Note: I have included a number of specific readings under the weekly topics. We will focus on one or two of these per lecture. The rest of the papers serve as back ground reading, specifically with regards to term papers)*

#### ***Week 7: Environment and Social Institutions***

- Alesina Alberto and George-Marios Angeletos. 2005. Fairness and Redistribution: US vs Europe. American Economic Review, 95: 913-35.
- Bothelo Anabela, Glenn W. Harrison, Ligia M. Costa Pinto and Elisabeth E. Rutström. 2005. Social Norms and Social Choice. ( Paper with nice structure).
- Cinyabuguma, Mattias, Talbot Page and Louis Putterman. 2005. Cooperation Under the Threat of Expulsion in a Public Goods Experiment. Journal of Public Economics: 1421-1435.
- Gächter Simon and Benedikt Herrmann. 2006. The Limits of self-governance in the presence of spite: Experimental evidence from urban and rural Russia. CeDEx Discussion Paper no. 2006-13.
- Visser, M. and Burns, J. (2007) Bridging the Great Divide: The Provision of Public Goods and Punishment in Unequal Societies.

#### ***Week 8: Environment and Cooperation***

- Hoffman and Spitzer (1982), ‘ The Coase Theorem: Some Experimental Tests’, Journal of Law and Economics, 25, pp 73-98.
- Harrison and McKee (1985), Experimental Evaluation of the Coase Theorem, Journal of Law and Economics, 28: 653-70.
- Harrison, Hoffman, Rutstrom and Spitzer (1987), Coasean Solutions to the Externality Problem in Experimental Markets, Economics Journal, 97, pp388-402
- Shogren, J.(1998), Coasean Bargaining with Symmetric Delay Costs. Resource and Energy Economics.
- **Hand-in Problem set 3**

### ***Week 9: Environmental Control***

- Plott, C. (1983), Externalities and Corrective Policies in Experimental Markets, *Economic Journal*, 93, pp106-27.
- Cason R. N. (1995), “ An experimental Investigation of the Seller Incentives in the EPA’s Emission Trading Auction’ *American Economic Review*, 85: 905-22.
- Bohm, P. And Carlen B. (1999) Emission Quota Trade among the Few: Laboratory Evidence of Joint Implementation among Committed Countries, *Resource and Energy Economics*, 21: 42-66.

### ***Week 10: Environmental Conflict***

- Walker, J.M. and Gardner, R. (1992) Probabilistic Destruction of Common Pool Resources: Experimental Evidence, *Economic Journal*, 102: 1149-61.
- Palfrey and Rosenthal (1994) Repeated Play, Cooperation and Coordination: An Experimental Study, *Review of Economic Studies* 61, 545-65
- Hackett, Schlager and Walker (1994) The Role of Communication in Resolving Commons Dilemmas: Experimental Evidence with Heterogeneous Appropriators, *JEEM* 27, 99-126.
- Mason C.F. and Phillips O.R. (1997) Mitigating the Tragedy of the Commons through Cooperation: An Experimental Evaluation, *JEEM*, 34, 148-72
  
- **Hand-in Problem set 4**

### ***Week 11: Environmental Risk***

- Grether D. M. and Plott, C.R (1979), “Economics Theory of Choice and the Preference Reversal Phenomenon’ *American Economic Review*, 69.
- Kahneman, D. and Tversky, A (1979) Prospect Theory: An analysis of Decision under Risk’ *Econometrica* 47:263-91.
- Kahneman, D. and Tversky, A (1981) The Framing of Decisions and the Psychology of Choice, *Science*, 211: 453-8
- Hogarth, R. M. and Kunreuther (1989), Risk, Ambiguity and Insurance, *Journal of Risk and Uncertainty*, 2, 5-35
- Shogren, J. (1990) The impact of Self-Protection and Self Insurance on Individual Response to Risk. *Journal of Risk and Uncertainty*, 2, 55-35/
- McCelland, G.H., Schulze, W.D. and Coursey, D. L. (1993) Insurance for Low-Probability hazards: A Bimodal Response to Unlikely Events, *Journal of Risk and Uncertainty*, 7,95-116.

### ***Week 12: Environmental Discounting***

- Arrow, K.J., W.R. Cline, and K-G.Mäler. (1996) Intertemporal Equity, Discounting, and Economic Efficiency. In *Economic and Social Dimensions of Climate Change. Contribution of Working Group III to the Second Assessment Report of the Intergovernmental Panel on Climate Change*, edited by J.P. Bruce and E.F. Haites. Cambridge: Cambridge University Press, 129–144.

- Azar, C., K. Lindgren, and M. Obersteiner. (2007) On the Attainability of Low CO<sub>2</sub> Concentration Targets. Submitted for publication in Proceedings of the National Academy of Sciences
- Clark. Mathematical Bioeconomics – Optimal Management of Renewable Resources. Chapter: Capital Theoretic Aspects of Resource Management - Interest and Discount Rates
- Lind, R.C., K.J. Arrow, and G.R. Corey. (1982) Discounting for Time and Risk in Energy Policy. Washington, DC: Resources for the Future.
- Sterner T. And Person, M. (2007) An Even Sterner Review. (comment on Stern Report)
- Stern, N.H. (2006) The Economics of Climate Change: The Stern Review. [http://www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/stern\\_review\\_report.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm) (accessed 2007 0303)