

Seminar in International Development: Environment and Development

Environmental Issues in Economic Development

Course Description

General Information

Course number: M3459.0002

Instructor: Semeeyoon

Lecture Days/ Time: Thurs 11:00-13:45

Lecture Location: #140 - 105

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Office Hours: TBC

Suggested pre-requisite: Microeconomics, Mathematics for Economics

Course Description

This seminar course examines environmental issues in developing countries, such as air pollution, management of the commons, climate change, energy use, and public health. This course connects the foundation of microeconomics with real-life household and firms' decision-making on environmental issues. Students will be exposed to basic empirical techniques and the latest examples that identify and/or evaluate key environmental problems in development.

The main goals of this course are to discuss the possible economic causes and consequences of environmental issues and to be cognizant of the various government and market-based solutions to environmental issues in development.

Evaluation and Grading

The course grade will be based on:

Referee report (one of three)	DUE October 26	20%
Paper	DUE November 27	30%
Final Exam	On December **	20%
Group presentation		20%
Class Participation		10%

Books for the Course

This course will be taught principally through the medium of scholarly articles and papers. All the readings used for the course will be available at the portal.

Reference for microeconomics: Pindyck and Rubinfeld. *Microeconomics*. 8th ed. New Jersey: Pearson Prentice Hall, 2013.

Reference for econometrics: Angrist, Joshua D., & Pischke, Jorn-Steffen. 2009. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton, New Jersey: Princeton University Press.

Journal articles to review will be introduced in class.

Outline

Week 1: Introduction to class - relationship between environment and development

Required reading:

- Banerjee, A. V., & Duflo, E. (2007). The Economic Lives of the Poor. *The Journal of Economic Perspectives*, 21(1), 141.
- World Bank (2003). World Development Report Sustainable Development in a Dynamic World--Transforming Institutions, Growth, and Quality of Life, Chapter 1-3.

Optional reading:

Rockstrom, J., W. Steffen, et al. (2009). "A safe operating space for humanity." *Nature* 461(7263): 472-475.

Week 2 Empirical methods and economic theory

Required reading:

- Deaton, A. (2010). Instruments, Randomization, and Learning About Development. *Journal of Economic Literature*, 48, 424–455.
- Greenstone, M., & Gayer, T. (2009). Quasi-experimental and Experimental Approaches to Environmental Economics. *Journal of Environmental Economics and Management*, 57(1), 21-44.

Optional reading:

- Deaton, A. (2010). Understanding the Mechanisms of Economic Development. *Journal of Economic Perspectives*, 24, 3–16.

Week 3 Health Effects of Pollution

Required reading:

- Overview of outdoor pollution - HEI (2010). *Outdoor Air Pollution and Health in the Developing Countries of Asia: A Comprehensive Review* (Executive Summary). Discussion paper, Health Effects Institute (International Scientific Oversight Committee).
- Jayachandran, S. (2009). Air Quality and Early-life Mortality Evidence from Indonesia's Wildfires. *Journal of Human Resources*, 44(4), 916-954.
- Overview of indoor pollution - Duflo, E., Greenstone, M., & Hanna, R. (2008). Indoor Air pollution, Health and Economic Well-being. *Surveys and Perspectives Integrating Environment and Society*, 1, 1-9.

Recommended reading:

- Grossman, M. (1972). On the Concept of Health Capital and the Demand for Health. *Journal of Political Economy*, 223–255.
- Currie, J., & Vogl, T. (2012). *Early-life Health and Adult Circumstance in Developing Countries* (No. w18371). National Bureau of Economic Research.

Week 4 Policy options for Indoor Air Pollution

Required reading:

- Hanna, R., Duflo, E., & Greenstone, M. (2012). *Up in smoke: the influence of household behavior on the long-run impact of improved cooking stoves* (No. w18033). National Bureau of Economic Research.
- Mobarak, A. M., Dwivedi, P., Bailis, R., Hildemann, L., & Miller, G. (2012). Low Demand for Nontraditional Cookstove Technologies. *Proceedings of the National Academy of Sciences*, 109(27), 10815-10820.

Week 5 Policy options for Outdoor Air Pollution

Required reading:

- Blackman, A. (2000) Informal Sector Pollution Control: What Policy Options Do We Have? *World Development*, 28(12), 2067–2082.
- Duflo, E., Greenstone, M., Pande, R., & Ryan, N. (2013). Truth-telling by Third-party Auditors and the Response of Polluting Firms: Experimental Evidence from India. *Quarterly Journal of Economics*, 128(4), 1499-1545.
- Oliva, P. (2015). Environmental regulations and corruption: Automobile emissions in Mexico City. *Journal of Political Economy*, 123(3), 686-724.

Week 6 Management of the Commons

Required reading:

- Acemoglu, D., S. Johnson, and J. Robinson. (2001). The Colonial Origins of Comparative Development: An Empirical Investigation. *American Economic Review* 91, 5: 1369-1401.
- Banerjee, A., L. Iyer, and R. Somanathan. (2007) *Public Action for Public Goods* (No. w12911). National Bureau of Economic Research.
- Dayton-Johnson, J. (2000). Determinants of Collective Action on the Local Commons: a Model with Evidence from Mexico. *Journal of Development Economics*, 62(1), 181-208.

Optional reading:

- Khwaja, A. I. (2009). Can Good Projects Succeed in Bad Communities? *Journal of Public Economics*, 93(7), 899-916.

Week 7 Impacts of climate change

Required reading:

- Burgess, R., Deschenes, O., Donaldson, D., & Greenstone, M. (2011). Weather and Death in India. *Cambridge, United States: Massachusetts Institute of Technology, Department of Economics. Manuscript.*
- Hsiang, S. M. (2010). Temperatures and Cyclones Strongly Associated with Economic Production in the Caribbean and Central America. *Proceedings of the National Academy of Sciences*, 107(35), 15367-15372.

- World Bank. World Development Report 2010. Chapter 1, 2.

Optional reading:

- Hsiang, S. M., & Jina, A. S. (2014). *The Causal Effect of Environmental Catastrophe on Long-Run Economic Growth: Evidence From 6,700 Cyclones* (No. w20352). National Bureau of Economic Research.
- Stern, N. (2008) The Economics of Climate Change. *American Economic Review* 98, 2: 1-37.

Week 8 Land, agriculture, and nutrition

Required reading:

- Banerjee, A. V. (1999) *Land Reforms: Prospects and Strategies*. Mimeograph, Massachusetts Institute of Technology.
- Duflo, Esther, Michael Kremer and Jonathan Robinson. 2011. "Nudging Farmers to Use Fertilizer: Theory and Experimental Evidence from Kenya." *American Economic Review*, 101(6):. DOI: 10.1257/aer.101.6.2350
- Foley, J. A., et al. (2011). Solutions for a cultivated planet. *Nature*, 478(7369), 337-342.

Week 9 Climate change and agriculture

Required reading:

- Deschenes, O., & Greenstone, M. (2007). The Economic Impacts of Climate Change: Evidence from Agricultural Output and Random Fluctuations in Weather. *The American Economic Review*, 354-385.
- Schlenker, W. & Roberts, M.J. (2009). Nonlinear Temperature Effects Indicate Severe Damages to U.S. Crop Yields Under Climate Change. *Proceedings of the National Academy of Sciences* 106, 15594-15598.
- World Bank. World Development Report 2010. Chapter 3.

Week 10 Climate change and energy

Required Reading:

- Wolfram, C., Shelef, O., & Gertler, P. (2012). How Will Energy Demand Develop in the Developing World? *The Journal of Economic Perspectives*, 119-138.
- Borenstein, S. (2012). The Private and Public Economies of Renewable Electricity Generation. *The Journal of Economic Perspectives*, 67-92.
- Lucas D., Fuchs, A. & Gertler, P. (2014). Cash for Coolers: Evaluating a Large-Scale Appliance Replacement Program in Mexico. *American Economic Journal: Economic Policy*, 6(4): 207-38.

Week 11 Public services – electricity

Required Reading:

- Dinkelman, T. (2011). The Effects of Rural Electrification on Employment: New Evidence from South Africa. *American Economic Review*, 101, 3078–3108.
- Lipscomb, M., Mobarak, M. A., & Barham, T. (2013). Development effects of electrification: evidence from the topographic placement of hydropower plants in Brazil. *American Economic Journal: Applied Economics*, 5(2), 200-231.
- Urpelainen, J. & Yoon, S. (2015) Solar home systems for rural India: Survey evidence on awareness and willingness to pay from Uttar Pradesh. *Energy for Sustainable Development*, 24:70-78.

Week 12 Public services – water resources

Required Reading:

- Ostrom, E. & R. Gardner (1993). Coping with Asymmetries in the Commons: Self- Governing Irrigation Systems Can Work. *Journal of Economic Perspectives*, 7(4), 93–112.
- Jacoby, H., R. Murgai & S. U. Rehman (2004). Monopoly Power and Distribution in Fragmented Markets: The Case of Groundwater. *Review of Economic Studies*, 71(3), 783–808.
- FAO. (2007). *Coping with Water Scarcity*, Discussion paper, FAO and UN Water.

Week 13 Public services – water quality

Required Reading:

- Kremer, M., J. Leino, E. Miguel, & A. Zwane (2011). Spring Cleaning: Rural Water Impacts, Valuation, and Property Rights Institutions. *Quarterly Journal of Economics*, 126, 145–205.
- Bennett, D. (2012). Does Clean Water Make You Dirty? Water Supply and Sanitation in the Philippines. *Journal of Human Resources*, 47, 146–173.
- WHO. (2010). *Global Annual Assessment of Sanitation and Drinking Water: Targeting Resources for Better Results*, Discussion paper, WHO and UN Water.

Week 14 Presentations

Week 15 Final paper due