Fall Term 2010, Tuesday, 10:40-12:10, Room#608 Environmental Economics and Environmental Policy No. 1

1. Course Objectives

This course will take a comprehensive look at environmental economics and environmental policy, from the history of its development to its application to pollution control and current global issues. Particular emphasis will be placed on 3 types of environmental policies; Command and Control (CAC), Market Based Instruments (MBIs), and Voluntary Approach (VA). Furthermore, policy evaluation theory and methodology such as PDCA Cycle and Cost Benefit Analysis will be discussed.

Key Words: Environmental Economics, Environmental Policy (CAC, MBIs, VA), Air pollution, Water pollution, Static and Dynamic Efficiency, PDCA Cycle, Policy Integration, Cost Benefit Analysis, Benefit Assessment, Project Evaluation, Policy Evaluation, Evaluation Study

2. Schedule of Course Work

1. Introduction: Theory and practice of Environmental Economics and Environmental Policy

Part 1: Historical Development of Environmental Policies

We will review the history of pollution and combating against pollution in Japan.

- 2. Air Pollution and Policy
- 3. Water Pollution and Policy

4. * Students have to make a short report and presentation about the situation of major pollution issues (air and water) and ambient standards in your home country.

Part 2: Theory of Environmental Policies

We will see three basic types of environmental policies, Command and Control (CAC), Market Based Instruments (MBIs), and Voluntary Approach (VA) and their efficiency.

5. CAC and MBIs and the comparison of their efficiency (1)

6. CAC and MBIs and the comparison of their efficiency (2)

- 7. Voluntary Approaches and theory of Policy Mix
- 8. Climate Change Policy

9. * Students have to a short report and presentation about the pollution control policy (air, water and climate) in your home country.

Part 3: Economic Evaluation on Environmental Policy and Project

In this part, we will discuss policy evaluation and economic evaluation of environmental policy, focusing on Cost of Illness (COI), Stated Preference (SP), and Revealed Preference (RP).

- 10. PDCA Cycle and Policy Evaluation
- 11. Cost Benefit analysis in Environmental Policy
- 12. Economic Valuation on Environmental Policy-COI, SP and RP
- 13. Contingent Valuation Method (CVM) and Travel Cost Method (TCM)
- 14. The Design of Environmental Policy

15. * Students have to a short report and presentation about Policy Evaluation of the pollution control policy (air, water or climate) in your home country. Concluding remarks

3. References

Committee on Japan's Experience in the Battle against Air Pollution (1997), *Japan's Experience Against Air Pollution: Working towards Sustainable Development*, The Pollution-Related Health Damage Compensation and Prevention Association, Tokyo.

Field, B. and M. K. Field (2009), Environmental Economics: an Introduction, 5th ed., McGraw-Hil

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- Liu, J.T., Hammit, J.K. and Liu, J.L. (1997), Estimated Hedonic Wage Function and the Value of Life in Developing country, *Economics Letters*, 57, pp.353-358.
- Matsuoka, S. (2000), Implementation of environmental policy in the developing countries: Regulatory Instrument and their efficiency, *Journal of International Development Studies*, 9 (2), pp.11-36.
- Matsuoka, S. ed. (2007), Effective Environmental Management in Developing Countries: Assessing Social Capacity Development, Palgrave-Macmillan, London.
- Miller, T.R. (2000), Variations between countries in Values of Statistical of Life, Journal of Transport Economics and Policy, 34(2), pp.169-188
- Portney, P. R. and Stavins, R. N., eds. (2000), *Public Policies for Environmental Protection (2nd ed.)*, Resources for the Future, Washington D.C.

Slovic, P. (1987), Perception of Risk, Science, 236, pp 280-288.

- Stavins, R.N., ed. (2000), *Economics of the Environment: Selected Readings (4th ed.)*, W.W. Norton, New York.
- Viscusi, W. K. (1993), the Value of Risks to Life and Health, *Journal of Economic Literature*, 21, pp.1912-1946.

4. Grading Method

Report 50% Presentation 50%

5. URL

http://www.f.waseda.jp/smatsu/

6. Introduction: Theory and practice of Environmental Economics and Environmental Policy

6.1 Development and Environment

Ecological System (Natural System) and economic system

Environmental Issues: Brown Issue and Green Issue

Development (Growth) and Environment EKC: Environmental Kuznets Curve

6.2 Public policy and Environmental Policy

Market and pollution

Market Failure: 1. Monopoly

- 2. Public goods: non-rivalness and non-excludability
- 3. Externality: Pecuniary and Technical externality

Economic regulations and social regulations

Social regulations: Transport regulation, Drag and Food regulation, Occupational safety regulation Cosmetic regulation, Environmental regulation \rightarrow pollution control, nature conservation

Environmental problems; pollution \rightarrow health impact/damage (chronic bronchitis, asthma) \leftarrow Epidemiology: Environmental standards Emission source \rightarrow emission source control : stationary source and mobile source, point and non point source \rightarrow emission (effluent) standards

CAC: command and control MBIs: market based instruments VA: voluntary approach

Government Failure: inefficiency

Sustainable Society, Sustainable Society, Sustainability:

Low Carbon Society Circular Society Nature co-existence Society



Figure 4 Environmental indicators at different country income levels

Note: Estimates are based on cross-country regression analysis of data from the 1980s. a. Emissions are from fossil fuels. Sources: Shafik and Bandyopadhyay, background paper; World Bank data.