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Sustainable Development and International Development Cooperation
No. 3

1. Pollution Haven Hypothesis and Porter Hypothesis

Pollution Haven Hypothesis

Free trade can be good for environment (Antweiler et al., 2001 and Liddle, 2001). Trade raises income levels of people in developing countries, and by raising real incomes, it will create demands for tighter environment protection because higher income individuals want a cleaner environment. But lower trade barriers could hurt environment if heavy polluters move to countries with weaker regulations. Economists call this the Pollution Haven Hypothesis (PHH). The PHH refers to the possibility that multinational firms, particularly those engaged in highly polluting activities, relocate to countries with lower environmental standards. The PHH argues that low environmental standards become a source of comparative advantage, and thus shifts in trade patterns. The PHH is basically a theory that suggests that high regulation countries will lose all the 'dirty industries' and poor countries will get them all.

Porter Hypothesis

The so-called Porter hypothesis asserts that firms can benefit from environmental regulations. It argues that well-designed environmental regulations stimulate innovation which, by enhancing productivity, increases firms' private benefits. As a consequence, environmental regulations would not only be good for society, they would also be good for firms.

Porter and van der Linde clarify this hypothesis, arguing that while environmental restrictions impose some immediate expenses on firms, regulations ''can trigger innovation that may partially or more than fully offset the costs of complying with them''. If regulations lead to innovations in the area of environmental protection, then these innovations can generate profits.

2. Steady State Economics, Stationary Economics

John Stuart Mill (1848), *Principles of Political Economy*

"It is scarcely necessary to remark that a stationary condition of capital and population implies no stationary state of human improvement. There would be much scope as ever for all kinds of mental culture, and moral and social progress"

Herman E. Daly (1977), *Steady-State Economics*, Freeman

"Steady State Economy (SSE) as an economy with constant stocks of people and artifacts, maintained at some desired, sufficient levels by low rates of maintenance "throughput" , that is, by the lowest feasible flows of matter and energy from the first stage of production (depletion of low

entropy materials from the environment) to the last stage of consumption (pollution of the environment with high –entropy wastes and exotic materials). (Daly 1977, p.17)

3. Ecological/ carrying capacity root: MSY, MEY

Rome Club (1972), *the Limits to Growth*

Ecological Carrying Capacity

Resource Economics

Maximum Sustainable Yield: MSY

Maximum Economic Yield: MEY

Biological Growth Curve：Time: t, Resource Stock: X

Resource: X and Pure Compensation Growth: dx/dt

Effort: E, Harvest H＝dx/dt, E= H/X →MSY

Total Revenue: TR, Harvest: H, Price: P, TR=PH

Total Cost: TC, Effort: E, Unit Cost: W, TC=WE

TR, TC → MEY

4. Economics: VWS, WS, SS, VSS

Very Weak Sustainability: VWS → Neo-classical Economics

Weak Sustainability

Strong Sustainability

Very Strong Sustainability: SSE

5. Sustainability Science; 2000 Friibergh Workshop on Sustainability Science

（Friibergh, Sweden, October 11-12, 2000）

Core 7 Questions of Sustainability Science

1. How can the dynamic interactions between nature and society --including lags and inertia--be better incorporated into emerging models and conceptualizations that integrate the Earth system, human development, and sustainability?

2. How are long-term trends in environment and development, including consumption and population, reshaping nature--society interactions in ways relevant to sustainability?

3. What determines the vulnerability or resilience of the nature-society system in particular kinds of places and for particular types of ecosystems and human livelihoods?

4. Can scientifically meaningful "limits" or "boundaries" be defined that would provide effective warning of conditions beyond which the nature-society systems incur a significantly increased risk of serious degradation?

5. What systems of incentive structures -- including markets, rules, norms, and scientific information -- can most effectively improve social capacity to guide interactions between nature and society toward more sustainable trajectories?

6. How can today's operational systems for monitoring and reporting on environmental and social conditions be integrated or extended to provide more useful guidance for efforts to navigate a transition toward sustainability?

7. How can today's relatively independent activities of research planning, monitoring, assessment, and decision support be better integrated into systems for adaptive management and societal learning?

6. References

Sustainability

World Commission on Environment and Development (1987), *Our Common Future*, Oxford UP

Bell, S. and Morse, S. (2008), *Sustainability Indicators*, Earthscan

7. Schedule of Course Work

1. Introduction 9/27

Part 1: History, Concept, and Theory of Sustainable Development (SD)

2. History and concept of SD 10/6

3. Theory of SD: Carrying Capacity and MSY 10/13

4. Measuring and Indicators of SD 10/20

5. * Students have to make short report and presentation about your definition and measuring of SD 10/27

Part 2: Development and Environment in Developing Countries

6. Development issues: Poverty Trap and big push

7. Economy and society of developing countries: Dual society and two sector development model

8. Development strategy: import substitution and export oriented

9. Development strategy and environment

10. * Students have to make a short report and presentation about development issues in selected countries.

Part 3: Theory and Practice of International Cooperation

11. History and theory of international development cooperation

12. PRSP, MDGs, and Paris Declaration

13. Assessing Aid and environment

14. * Students have to make a short report and presentation about aid and development in selected cases.

Part 4: Toward a Sustainable Global Society (governance)

15. Sustainable global society, global governance and concluding remarks