

Environmental Economics and Policy: Memo 1

1. Ecology, Nature, and Economy

Ecological System (Natural System) and economic system

Development and Environment

2. Public Policy

Market failure: ① Monopoly

② Public goods: nonrivalness and nonexcludability

③ Externality: Pecuniary and Technical

Economic regulations and social regulations

Social regulations on external diseconomy

Social : Transport regulation, Drug and Food regulation, Occupational safety regulation

Cosmetic regulation, Environmental regulation → pollution control, nature conservation

3. Environmental Policy

Environmental regulations : health risks and ecological risks

Environmental problems; pollution → health impact/damage (chronic bronchitis, asthma) ←
Epidemiology: Environmental standards

Emission source → emission source control : stationary source and mobile source, point and non
point source → emission (effluent) standards

CAC: command and control

MBIs: market based instruments

VA: voluntary approach

4. Environmental Policy in Japan

Air pollution

SO₂ HMV: 0.1ppm, 24HAV: 0.04ppm

NO₂ 24HAV: 0.04-0.06ppm

SPM(PM10, PM2.5) HMV: 200 μg/m²

O₃ 1HAV: 0.06ppm

Benzene YAV: 0.003mg/m³

(Trichloroethylene, Ethylene, Tetrachloroethylene, Dichloromethane, Dioxin)

Emission source control

Factory (plant)

Emission standards: SO_x : K value regulation (1968) $q=K \times 10^{-3} \times He^2$

K Values: 3.0-14.5 (17.5), q: kg/Nm³/h

Total pollutant load control (1974)

Automobile

SO_x, NO_x, PM10, PM2.5

Water pollution

Water quality standards:

①living environmental items: pH, BOD, SS, DO, Coliform

②Health items: Cd, T-CN, Pb, Cr, As T-Hg, Org-Hg, PCB etc. total 23 substances

Rivers : AA, A, B, C, D, E, Lakes: AA, A, B, C, Sea: A, B, C and I, II, III, IV

Effluent standards (1970) , Total pollutant load control (1979)

5. History of Environmental Policy in Japan

1950s Rapid Economic Growth, Yokkaichi Air Pollution, Pollution Victim Protest Movement

Citizen movements, pioneering role of local governments

1964 Yokohama Pollution Control Agreement (横浜市公害防止協定)

1967 Basic Law for Environmental Pollution Control (公害対策基本法)

1968 Air Pollution Control Law (大気汚染防止法)

K Value Controls: $q=K \times 10^{-3} \times He^2$, K Values: 3.0-14.5 (17.5), q: kg/Nm³/h

1974 Total Load Controls

1970 Pollution Diet (公害国会)、Water Pollution Control Law (水質汚濁防止法)

1971 Creation of Environment Agency (環境庁)

1972 Natural Environment Preservation Law (自然環境保護法)

1973 Compensation Law for Pollution-Related Health Damage (1987 amended)

(公害等健康被害補償法)、PPP: Polluter Pays Principle

1974 Amendment of Air Pollution Control Law (Total pollutant load control)

1979 Amendment of Water Pollution Control Law (Total pollutant load control)

1993 Environment Basic Law (環境基本法)

1994 Basic Environment Plan (環境基本計画)

1997 Environmental Impact Assessment Law (環境影響評価法)

1998 Law Concerning the Promotion of the Measures to Cope with Global Warming

(地球温暖化対策推進法)

2000 Circular Society Basic Law (循環型社会形成推進基本法)

2001 Ministry of Environment (環境省)

2002 Law for the Promotion of Nature Restoration (自然再生推進法)