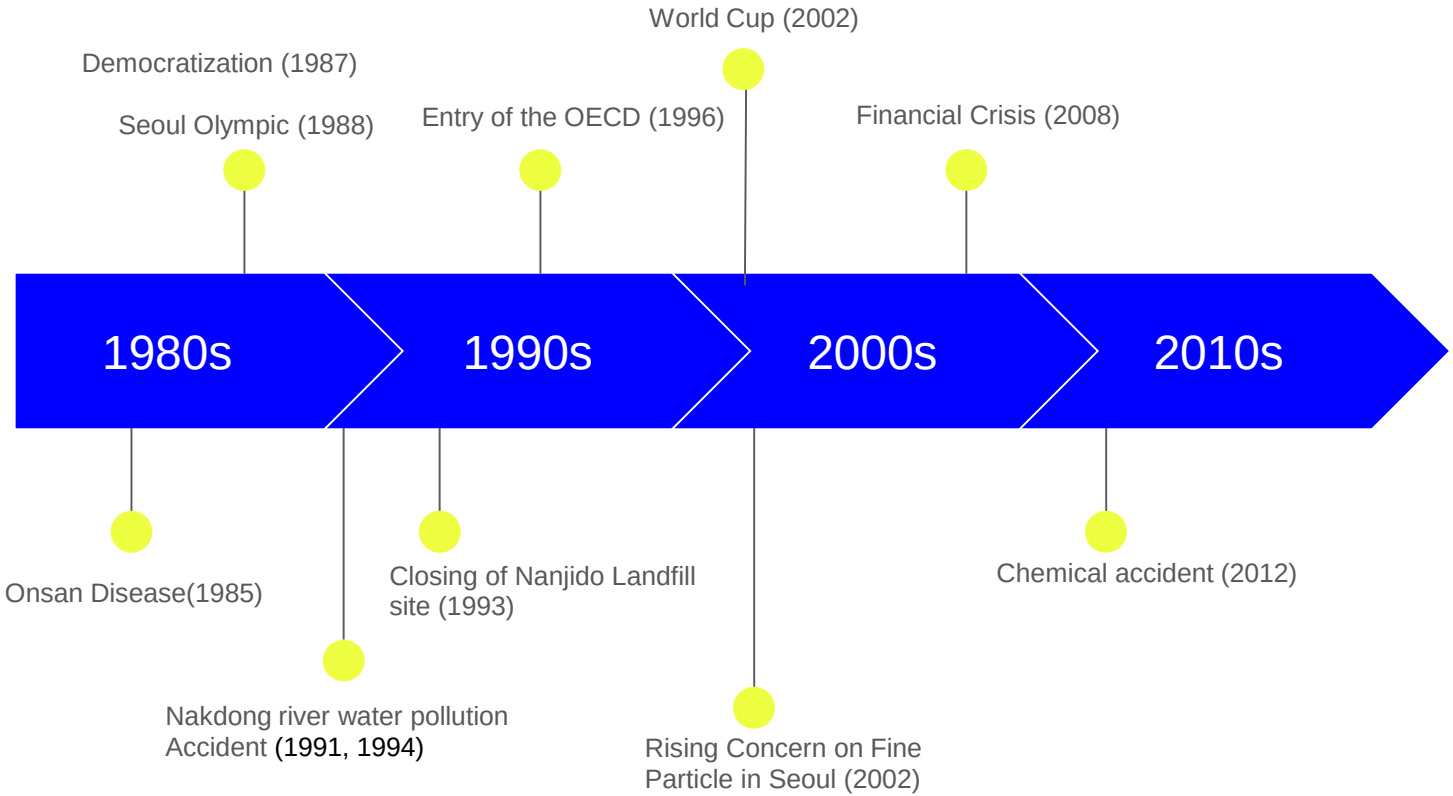
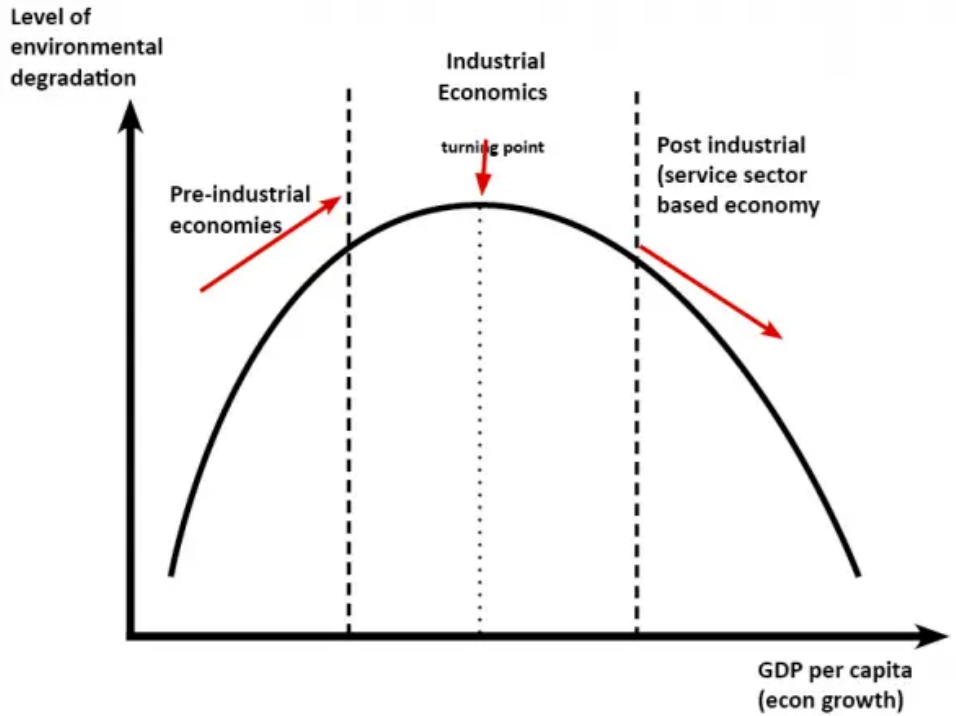
Evolution of the Environmental Policy in Korea

2023. 10. 11

Key events since 1980s in Korea



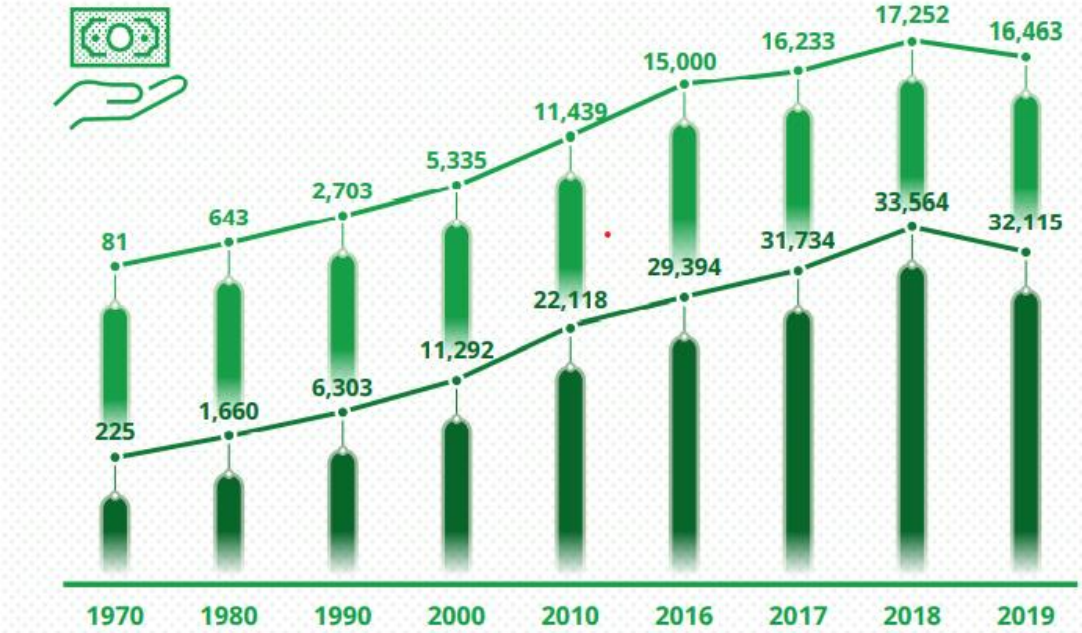
Economic growth vs Environmental quality



source : ‘Environmental Kuznets Curve’, Tejvan Pettinger (2019)

GDP and Per-capita GNI

[Bank of Korea, 2020]



source : Korea net

1987 June Uprising for Democratization

source : Korea Joongang Daily

Explosion of NGOs after Democratization

Founding years	For all Korean NGOs
Prior to 1960	8.4%
1960s	5.7%
1970s	5.7%
1980s	17.3%
1990s	**49.0%**
2000s	14.2%

Source: Directory of Korean NGOs (2005)

Table 3.1 Percentage distribution of Korean NGOs in founding years

Published in 2012

The role of the environmental movement in government decision making in newly democratised Korea

Myungsang Kim

Water Quality Management

1980s : River Basins Comprehensive Plan

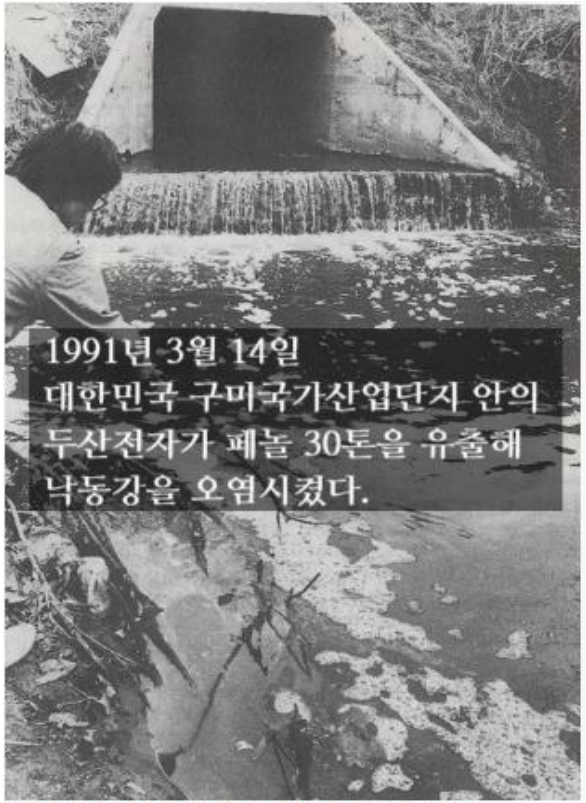
- Han River Basin Environmental Conservation Comprehensive Plan(1982)

  * Loan Project of the Asia Development Bank

- Nakdong River Basin Environmental Conservation Comprehensive Plan(1984)
- Southwestern Region Environmental Conservation Comprehensive Plan(1985) for Geum River and Yeongsan River Basins
- Comprehensive Plan on Clean Water Supply (1989)

⊳ Lack of Financial Resources and Effectiveness

Nakdong River Pollution accident



낙동강 페놀 오염사건 (출처; 대구경북녹색연합)

Protest of Environmental NGOs against the Polluting Company (1991)

Significant Changes of Water management (1998-2002)

- Holding a total of 420 Public debates and hearings with local residents, civil organizations, experts, and local governments to address conflicts between upstream and downstream

- Formulating Comprehensive Water Management Plan for the Four Major Rivers

a. Total Water Pollution Load Management System
b. Riparian Zone Designation
c. Water Use Charge System
d. Land purchase system for water supply areas

Total Water Pollution Load Management System(TPLMS)

The TPLMS sets water quality goals for each river basin based on scientific evidence, limiting the total amount of pollutant load for each water body. It also calculates total pollutant discharges to reach these goals, and allocates discharges to each local government in the river basin to keep the total volume of emissions from each section under the permissible level. If the total pollution load for certain parameters is exceeded, specific measures to reduce it are prescribed, with the MOE monitoring their implementation. Only biochemical oxygen demand (BOD) was targeted by load management until 2010 (leading to a more than 60% reduction in BOD discharges compared to 2002); in stage 2 (2011-15), total phosphorus was added as a target pollutant, and there are plans to expand the coverage to other substances.

Initially, three river basins (Nakdong, Geum and Yeongsan-Seomjin) had to carry out load management if they did not reach the water quality goals. Since June 2013, the TPLMS has been extended to the Han River basin and areas that are not part of the four major river basins but are affected by severe water pollution. As of June 2015, the TPLMS had been implemented by 122 local governments. Pollution load is allocated from top to bottom: from the watershed to each local government, then to a group of pollution sources, then to individual facilities. Feasibility, equity, cost of pollution reduction and local policies are all factors in load allocation.

Source : OECD Environmental Performance Reviews: Korea 2017

Increased Investment in waste-water treatment facilities

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<Table 4-5> Yearly Sewerage Distribution Trend

Classification	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total population (thousands)	49,624	50,034	50,394	50,664	51,435	51,717	51,881	52,127	52,419
Treated population (thousands)	42,450	43,568	44,631	45,264	46,358	47,034	47,538	48,016	48,506
Treatment facilities (number of facilities)	344 (1,681)	357 (1,905)	403 (1,991)	438 (2,332)	470 (2,594)	505 (2,858)	546 (3,067)	569 (3,205)	597 (3,160)
Distribution rate (%)	85.5	87.1	88.6	89.4	90.1	90.9	91.6	92.1	92.5
Capacity (thousands of tons per day)	23,273	23,946	24,568	24,925	25,118	25,228	25,297	25,330	24,999

Note: The number of treatment facilities in parentheses indicates the number of small public sewage treatment facilities (with a capacity of less than 500m^3 perday)

Source : ‘Ecorea’, Ministry of Environment, Korea (2017)

Change of water quality

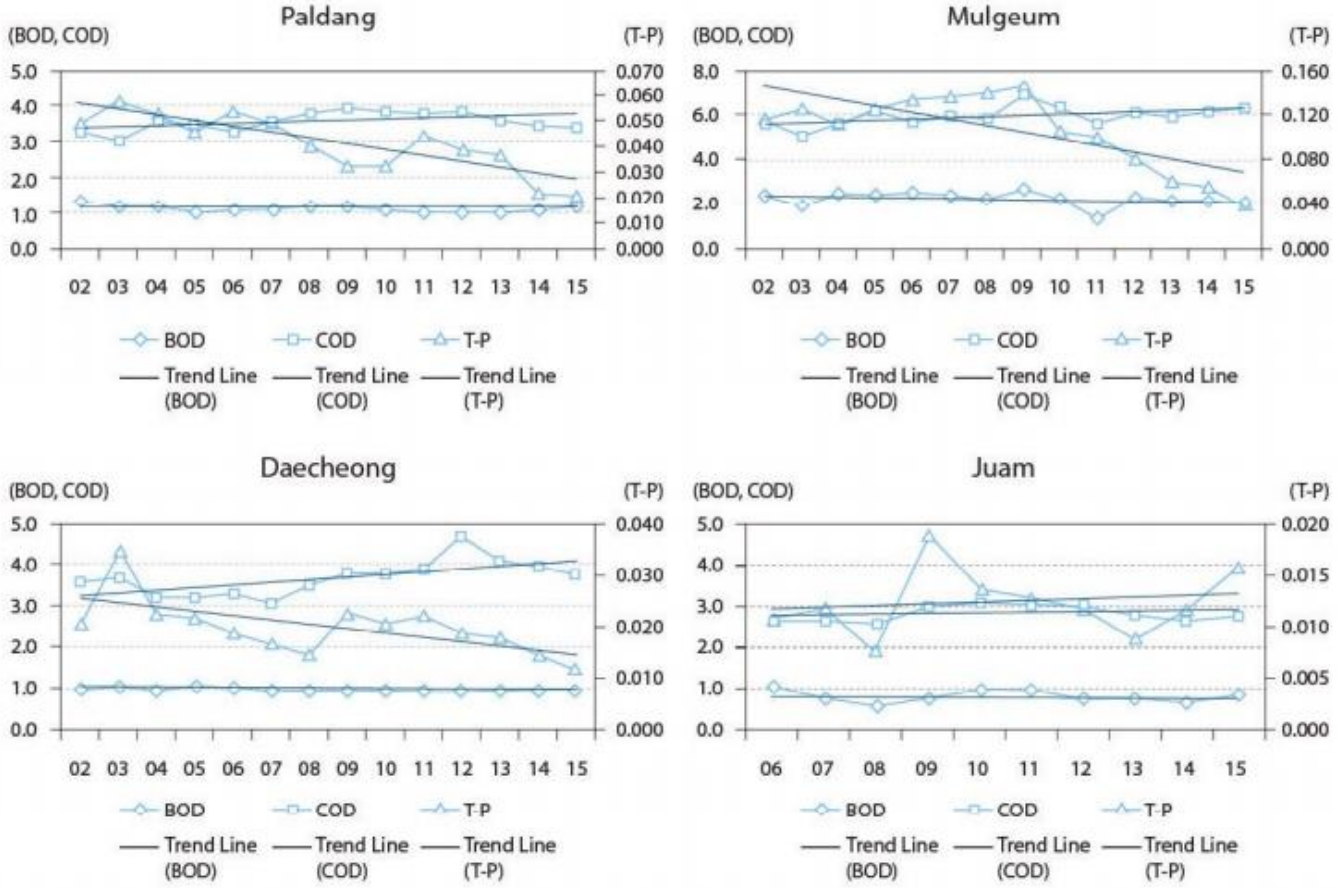
Table 2.6 **Water quality trends in four major drinking water reservoirs**, 1997-2004

(mg/l)

		1997				2004			
		BOD	Total coliforms	Total nitrogen	Total phosphorus	BOD	Total coliforms	Total nitrogen	Total phosphorus
Han	Paldang Reservoir	1.5	634	2.39	0.04	1.3	552	2.06	0.05
Nakdong	Mulguem Reservoir	4.2	1 835	4.50	0.14	2.6	275	2.83	0.11
Geum	Daecheong Reservoir	1.2	69	1.64	0.03	1.0	17	1.56	0.02
Yeongsan	Juam Reservoir	1.3	89	0.78	0.02	1.0	11	0.68	0.01

Source: MoE.

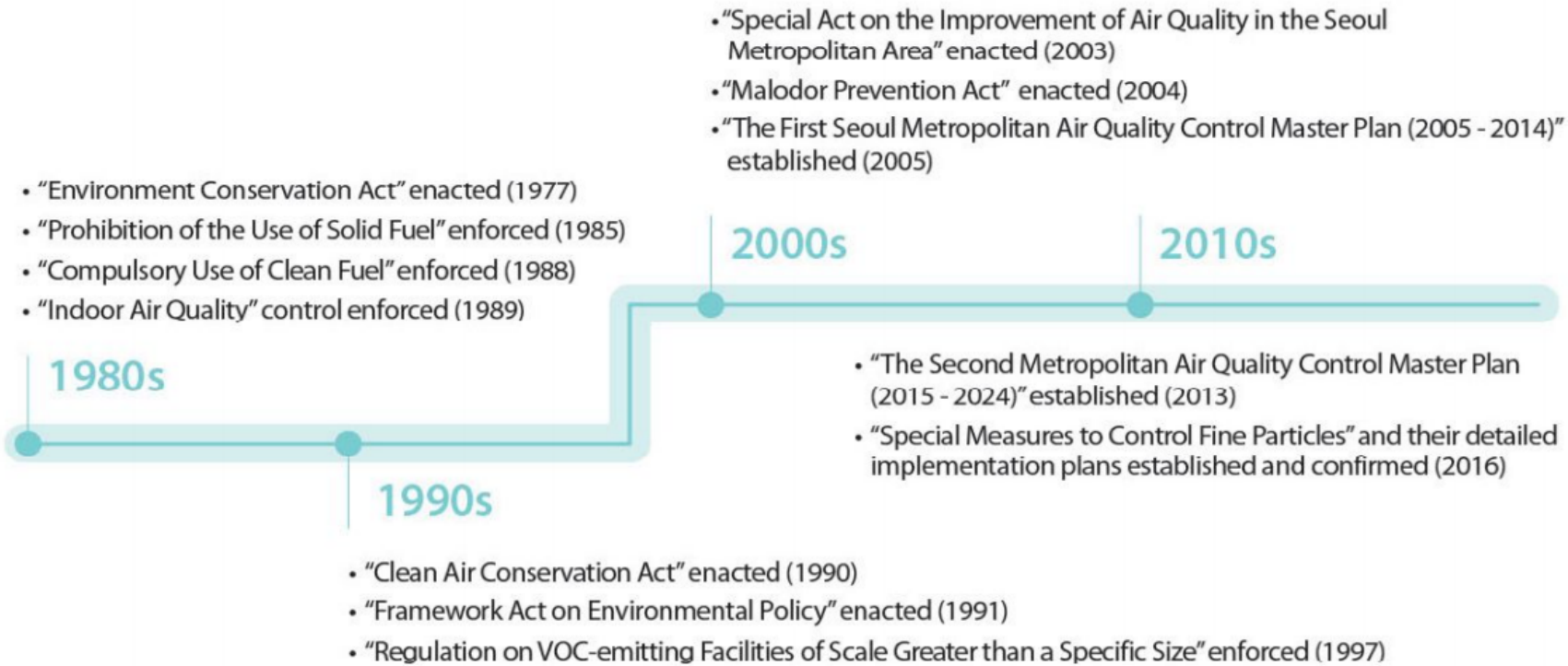
<Figure 3-3> Water Quality Variation at Key Locations of the Four Major Rivers (Unit: mg/L, year)



Source : ‘Ecorea’, Ministry of Environment, Korea (2017)

Air Quality Management

<Air Quality Policy Flow Chart>



Source : 'Ecorea', Ministry of Environment, Korea (2017)

Air Quality Management

‘Onsan Disease’ : the first pollution-related disease in Korea

Health damage caused by heavy metals in Onsan

Government Response toward the Onsan Disease

- Designated the Ulsan Heavy Industrial Complex as a Special Countermeasure area in 1986

a. Set local allowable emission limits for some air pollutants
b. Regulated the use of Low Sulfur B-C oil
c. Obliged air pollutant emitting facilities to install TMS

- Evacuated the local residents out of the polluted area

Air Quality Management in 1980s

- Compulsory Use of Low Sulfur Oil in 1981
- Prohibition of the Use of Solid fuel (such as coal) in 1985
- Compulsory Use of Clean Fuel (such as LNG) in 1988

  * after the Seoul Olympic Games

  ▻ Targeted Air Pollutant : Sulfur Dioxides

Air Quality Management in Metropolitan area (1990s)

- Designated the Area of not attaining the National Air Quality Standard as a Air Quality Regulation Area (1997, 1999)

a. Mandated Local Governments to establish the Implementation Plan for reducing Air Pollutants
b. Set a stringent emission limits for point sources
c. Regulated the VOCs emission
d. Introduced Inspection and Maintenance Program for In-Use Vehicle

▻ Targeted Air Pollutants : NOx and VOCs

2002 World Cup and Supply of CNG Buses

2002 World cup (source : Segye-ilbo)

Seoul Metropolitan Air Quality Improvement Plan

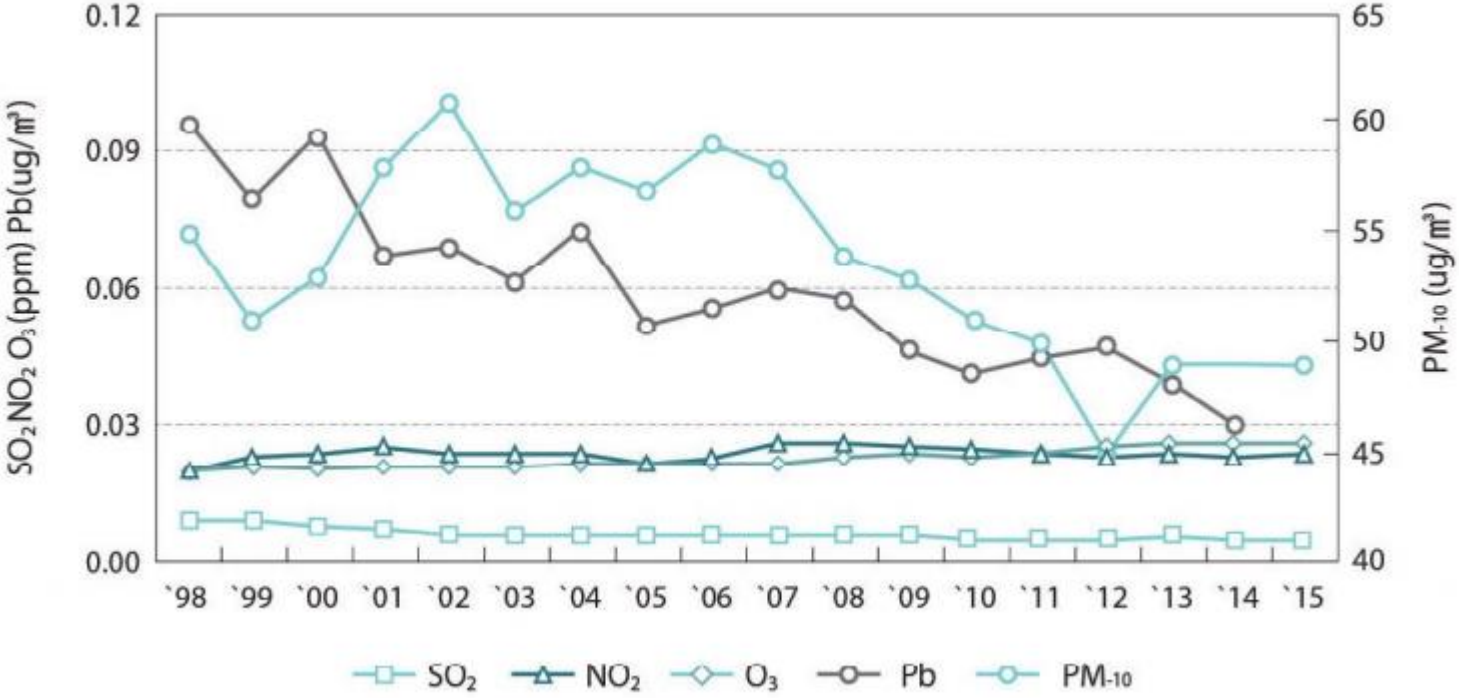
- Enacted the Special Act on the Improvement of the Air Quality in the Seoul Metropolitan Area (2003)

- 1st Seoul Metropolitan Air Pollution Control Master Plan (2005-2014)
  * Targeted Air Pollutants : PM10, NOx, SOx, VOCs

a. total load management of air pollutants for large scale facilities with emission trading scheme
b. promotion of low emission vehicles and early scrapping of old vehicles

- 2nd Seoul Metropolitan Air Pollution Control Master Plan (2015-2024)
  * Targeted Air Pollutants : PM_{10}, $PM_{2.5}$, NOx, SOx, VOCs, O_3

<Figure 2-2> Trend in annual changes of air pollution level (national average)



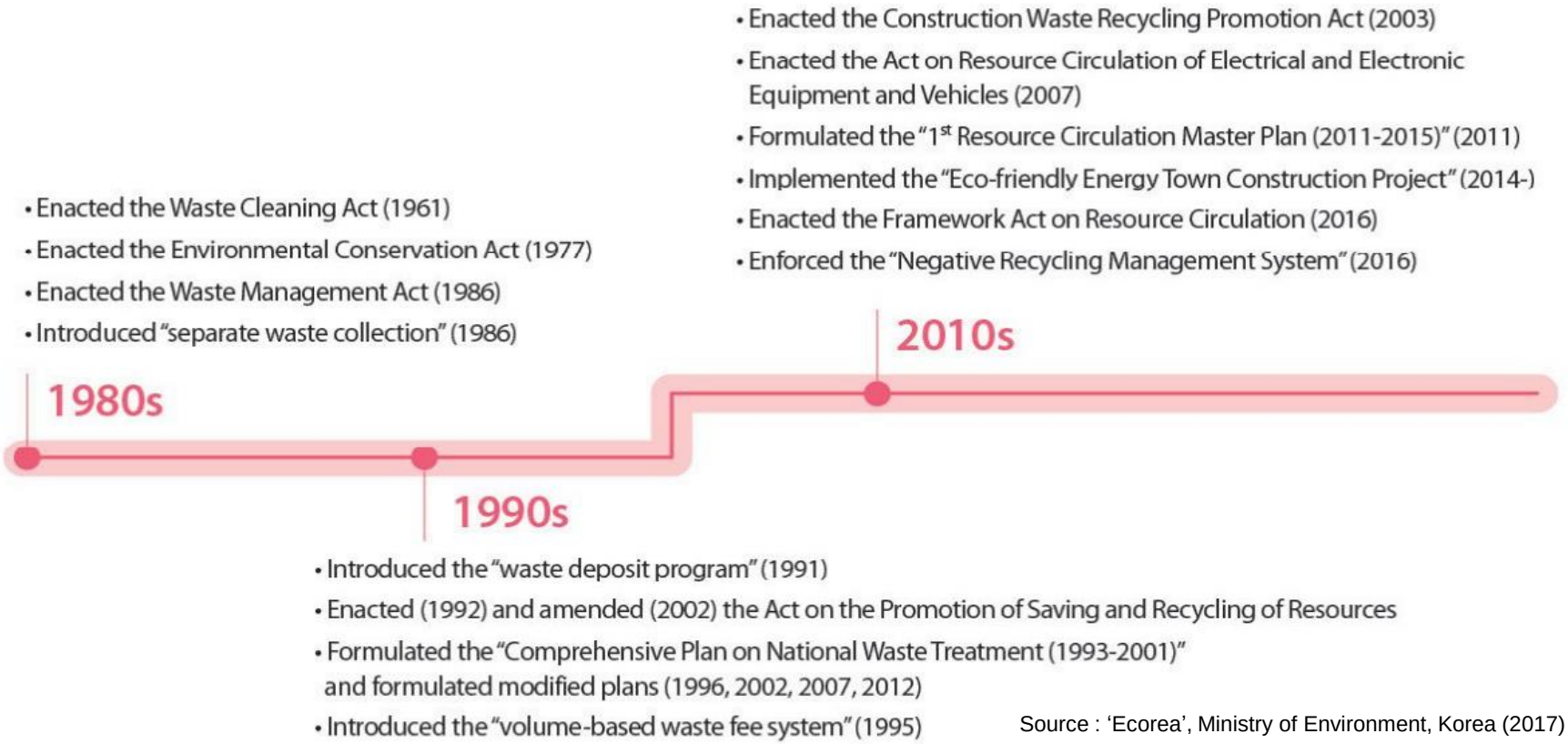
Source : ‘Ecorea’, Ministry of Environment, Korea (2017)

Special Measures for Reduction of Fine Particles since 2016

- Stronger Control on Diesel Vehicles and Construction Equipment
- Supply of Environmentally Friendly Vehicles such as Hybrid car
- Stronger Control of Point Sources (especially coal power plant)
- Innovation of the Fine Particles Forecasting and Warning System
- Close Cooperation with neighboring countries

Resource Circulation

<Resource Circulation Policy Flow Chart>



Source : 'Ecorea', Ministry of Environment, Korea (2017)

Resource Circulation

Treatment-focused waste management before 1990s

(사진출처:수도권매립지관리공사 제공)

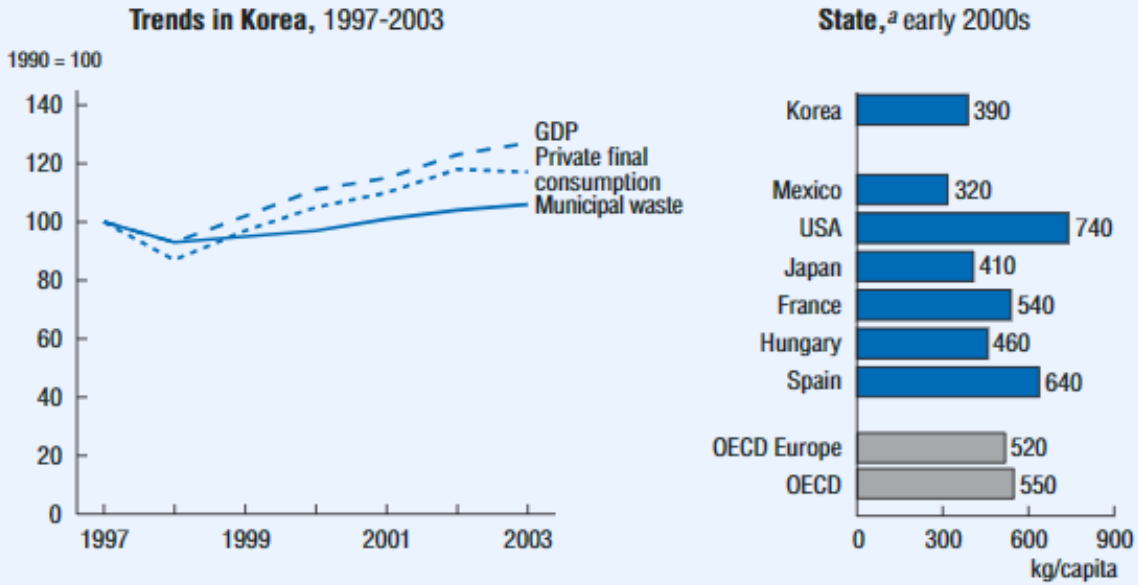
Nanjido landfill site was closed in 1993

Waste Reduction and Recycling in 1990s

- introduced the waste deposit system in 1991
- enacted the Act on promotion of saving and recycling of resources in 1992
- implemented the system of volume-based waste fee in 1995

Unsuccessful in decoupling the waste generation from economic growth in early 2000s

Figure 2.6 **Municipal waste generation**



a) In interpreting national figures, it should be borne in mind that survey methods and definitions of municipal waste may vary from one country to another. According to the definition used by the OECD, municipal waste is waste collected by or for municipalities and includes household, bulky and commercial waste and similar waste handled at the same facilities.

Source: OECD Environment Directorate.

Development of Waste Recycling in 2000s

- introduced the Extended Producer Responsibility(EPR) program in 2003
- enacted the act on resources circulation of electrical and electronic equipment and vehicles in 2007

source : IASToppers

Table 2.12 **Recycling under the Extended Producer Responsibility system**

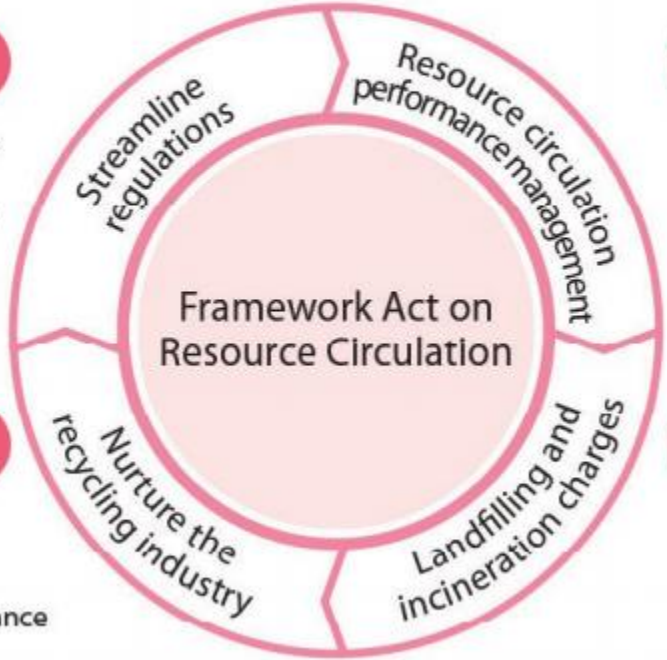
(1 000 tonnes)

	2002	2003	Increase (%)
Paper packs	9	17	*97*
Metal cans	152	161	*5*
Glass bottles	272	295	*8*
Plastic packaging materials	151	173	*14*
Lubricant oils (kiloliters)	146	151	*4*
Tires	166	195	*17*
Batteries/Cells	0.2	0.1	*–44*
Electronic products			
Televisions	7	10	*51*
Refrigerators	22	25	*11*
Washing machines	14	20	*38*
Air conditioners	0.1	0.8	*550*
Computers	0.4	3.2	*628*
Total	940	1 050	*12*

Source: MoE, 2003.

Paradigm shift in waste management in 2010s

Create a resource circulation society with resources and energy in a virtuous cycle



Streamline regulations

- Introduce a recycled resource recognition system (exclude from waste if certain requirements are met)

Resource circulation performance management

- Resource circulation performance management that incorporates the perspective of material balance

Nurture the recycling industry

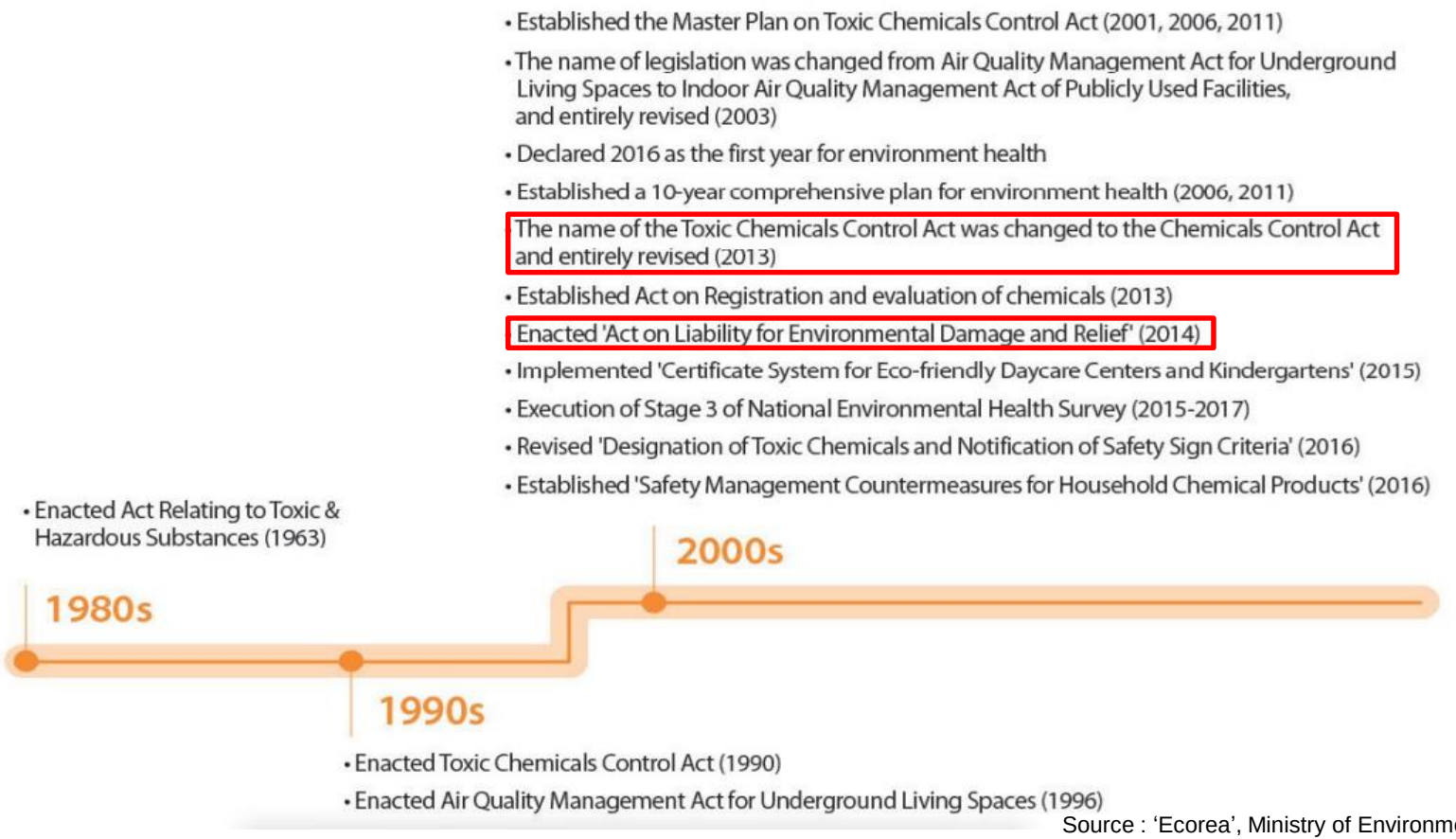
- Operate a recycled resource information center
- Financial and technical assistance

Waste disposal charge

- Reduce simple incineration and landfilling, and promote the recycling of waste

Source : ‘Ecorea’, Ministry of Environment, Korea (2017)

<Environment Health Policy Flow Chart>



Source : 'Ecorea', Ministry of Environment, Korea (2017)

Implication of the Environmental Policy Change

- **Impact of Economic Growth**
- **Political Democratization**
- **Environmental Movement**

Impact of Economic Growth

Degradation of Physical Environment

- Environmental Accidents as a Triggering Point for Enhancing Environmental Awareness

Class Structure Change

- Emergence of a Middle Class

- Role of a Middle Class in Growth of Environmentalism

Political Change : Democratization

Openness of the Political Opportunity Structure

- **Necessary Condition for Environmental Movement**

Erosion of “Issue Hegemony”

- **Diversification of Political Goals and Values**

Limits of Democratic Transition

- **Economic Growth-Oriented Political Ideology**
- **Inherent Dilemma of Collective Action**

Environmental Movement : Performance and Limits

Facilitating Environmentalism and Providing Significant Political Support for the Environmental Agency

- **Challenging Against Market Force**
- **Dramatizing Environmental Accidents and Enhancing Environmental Awareness of General Public**

Limits of Environmental Movement

- **Lack of Necessary Resources**
- **Insufficient Citizen Engagement**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