

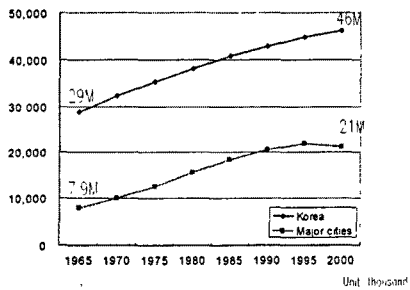
Environmental Health in Korea Issues and Challenges

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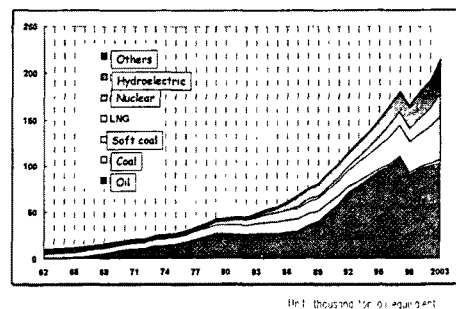
Background

- Rapid industrialization
- More energy consumption
 - More coal and oil consumption
- Significant urbanization
 - Half of national population dwell in six major cities
- Emerging environmental concerns

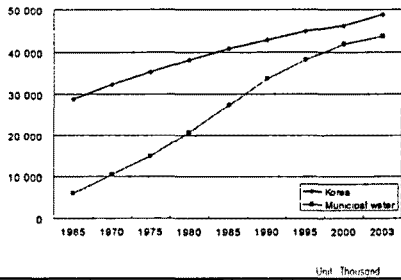
Population in Korea and in major 6 cities



Trend of total energy consumption in Korea

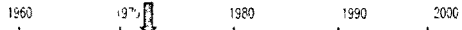


Population with municipal water supply in Korea



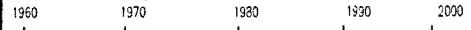
Environmental Legislation in Korea A Short Overview from 1963 until Now

KSEH 1972

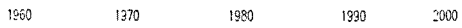


- **Pollution Prevention Act (公害防止法 1963)**
 - First environmental legislation
 - Objectives: to enhance **health status** by preventing health damages due to environmental pollutions caused by industrial operations
 - Economic Development was favored over environmental protection
 - No Enforcement Regulation until 1969

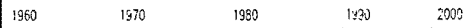
Rapid industrialization And urbanization



- **Environmental Conservation Act (環境保全法 1977)**
 - Environmental problems considered more seriously in late 1970's due to side effects of rapid industrialization
 - Objectives: Emphasis on future generation
 - Pollution prevention
 - Remediation of polluted environment
 - Includes Environmental Impact Assessment, Environmental Standards, etc
 - Still one Act controlled everything



- **Multiple Environmental Laws (複數法 制定 1990)**
 - "Environmental Right" concept was included in the amended Constitution
 - To incorporate new concept into the law, Environmental Conservation Act was reorganized into 6 laws
 - Each law covers specific environmental concerns
 - Environmental Policy Law (環境政策基本法)
 - Air Environment Conservation Law (大氣環境保全法)
 - Water Environment Conservation Law (水質環境保全法)
 - Noise/Vibration Control Law (騒音振動規制法)
 - Hazardous Chemical Control Law (有害化学物質管理法)
 - Environmental Dispute Court Law (環境紛争調停法)



- **Now 2004**
 - Many laws established to accommodate public demands and needs
 - 39 Environmental Laws enforced by Ministry of Environment
 - TMDL (Total Maximum Daily Loads) Law
 - Special laws for ecosystem conservation
 - Special laws for major rivers

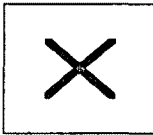
What is problem?

- Existing legislations are mostly 'media' specific
 - Air, Water, Drinking water, Soil, River, etc
- But why are these media so important?
- Environment should be viewed in context of risk to receptors

Environmental Pollution Episodes

- Onsan Disease 1983
- Phenol Discharge in Nakdong River 1991

Onsan disease (溫山病)



- Onsan industrial complex in southeast Korea
- Damages to crops, fish farms, and residents
- Body aches and paralysis
- Court ordered compensation for health effects and crop damage (first case in Korea)
- Causal agent for Onsan disease yet to be discovered

Onsan disease



JeongangDaily 1982 4 9

Phenol Discharge in Nakdong River

- Most significant drinking water contamination episode in Korea (1991)
- An electrical plant discharged phenol to upstream Nakdong river (major drinking water source for millions of people downstream)
- Many then-pregnant women sued industry for compensation for miscarriages
 - Court ordered compensation although causality between phenol and miscarriage was not clear



Phenol pollution in Nakdong River

Now and future

- Concerns about Environmentally related diseases or health impacts
- New development in environmental policy
 - Environmental Health Policy being established

Recent public recognition of importance of environmental health: A few cases

- Air quality: Seoulites would add 3 more year in their life expectancy should the air quality be similar to that of Tokyo, Japan
- Groundwater pollution caused from soil contamination would increase cancer morbidity among residents
- Residents near deserted copper mine suffering from cadmium exposure (Itai Itai disease?)
- Indoor air quality: New legislation for indoor air quality in Public places

환경이 아프면 몸도 아프다



“도쿄 공기만 같아도 3년 더 살아”

서울 오염 심각-노약자에 치명적


3 less years of life expectancy due to air pollution (PM and NOx)

환경-생태

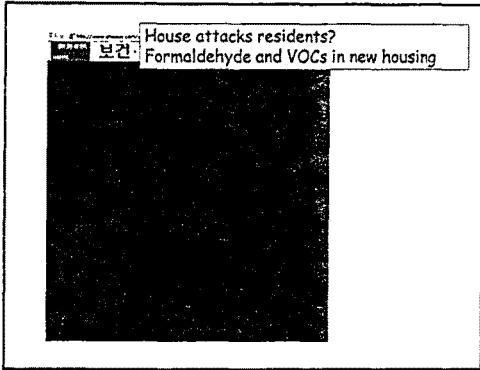
토양 오염 (Soil Contamination)

Nickel in soil may affect groundwater (drinking water) in Cheju

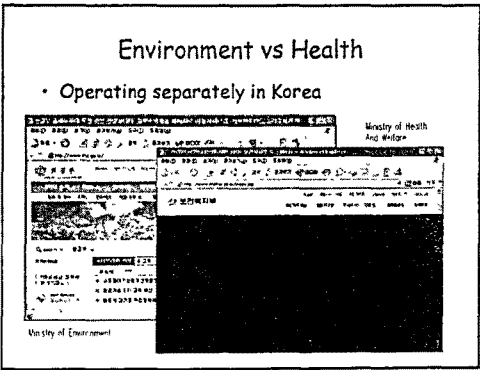
Cadmium poisoning suspected in residents near old copper mine



Itai Itai Disease in Korea?
Epidemiological study being conducted along with environmental assessment



- ### Challenges
- Reshuffling media-driven regulation to receptor oriented legislation
 - Policy
 - Sound Environmental Health Policy development
 - Ministry of Environment
 - Ministry of Health and Welfare
 - Research
 - Surveillance of environmentally related diseases
 - Environmental risk assessment and management
 - Protection for biologically and socially susceptible populations
 - Children
 - Low income bracket
 - Ecosystem in context of human health



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- ### Conclusion
- Environment is in close connection with health
 - This recognition bring out many active roles of environmental health professionals
 - KSEH should/will provide significant contribution to this development
 - International collaboration should be sought

Thank you

謝謝