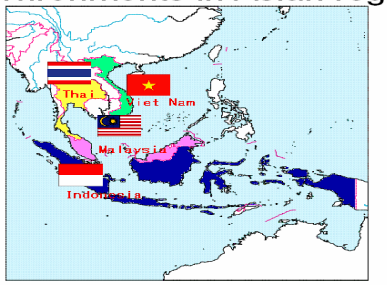
Results of surveys and questionnaires on urban environments in Asian region



Kitakyushu International Techno-Cooperative Association
KITA
Director of Technical Cooperation Division
Kazuya Kudo

Summary of questionnaires and hearing results

- Questionnaire survey (paper survey)

1. Surveyed period: Nov.12,2008 ~ Jan.21,2009
2. Surveyed countries : 6 countries with 22 locations, received responses from 15 locations, 68% response rate

①Malaysia ②Indonesia ③Thailand ④Vietnam ⑤China ⑥India

- Questionnaire survey (field study)

Nov.24, 25, 2008: Malaysia (Kuala Terengganu city, University of Malaya, Kemaman city)

Dec.3, 4, 2008: Indonesia (city of Surabaya, Institute of Technology Surabaya)

Dec.3, 5, 2008: Vietnam (Hai Phong city, Hanoi University of Civil Engineering)

Jan.20, 21, 2009: Thailand (Bangkok, Nonthaburi city, Chulalongkorn University)

Ⅰ. Legislative system in Environmental Field and Current State of Environmental Conservation

1. Legislation related to environment

- Legislative system has been developed in all 6 countries, except ones related with global warming prevention.
- If not identified laws, there are cases that Fundamental Environment Law covers all.

2. Progress of achievement of major environmental standards , and major sources causing problems

- Water Quality : Serious conditions are seen in Malaysia, Indonesia, and Vietnam
- Major source causing problems is waste water discharged from households and both industrial and domestic factories. Local characteristics exist; such as waste water discharged from palm oil factories in Malaysia, and waster water from agriculture in Vietnam.
- Air Quality : Air quality standard has not been achieved in Hanoi, Vietnam, and Bangkok, Thailand. Major cause is exhaust gas from automobiles.
- Lack of funds and technologies, insufficient monitoring capability of local governments are identified as problems. Lack of awareness by companies and local residents concerning environmental protection is another problem.

3. Guidance and monitoring by local governments

- Monitoring and guidance system by local governments has been developed in all 6 countries.
- However, it is often pointed out that admistrative guidance has not produced effective results. Insufficient monitoring capability by administration and lack of awareness by residents and private businesses are considered as its causes.
- Other issues raised are inadequate use of data, and existence of loopholes even if there are penal regulations. There are many challenges seen when law is executed.
- Due to not having its own facility, monitoring is often entrusted to research institutes of national governments and private analysis organizations.

4. Treatment of general solid wastes (excluding toxic wastes and industrial wastes)—①

- Though incineration treatment is taken in Malaysia and partly in china, open dumping is mostly seen; thus causing problems like contamination of groundwater.
- Incinerators are costly, difficult to operate and maintain; introduction of controlled type landfills is more realistic.
- Separation and collection of wastes is done by community collection, individuals, and waste collectors of private business.
- This method gives advantages waste generators as recycling businesses purchase wastes. However, volume reduction of collected wastes is concerned because of dropped prices of recycled materials.
- Composting has been conducted in many cities to reduce wastes as active measures to deal with wastes.
- City of Surabaya achieved a success of reducing great volume of wastes after trying composting at home and in markets, having cooperation from city of Kitakyushu.
- Same efforts are spreading to other areas like Bangkok.

4. Treatment of general solid wastes—②

- With supports from JICA and KITA, 3R project has been conducted in Hanoi, and composting project in Hai Phong.
- Some cities are working on measures to treat toxic wastes, including medical wastes, electric appliances, fluorescent tubes, and batteries.
- Insufficient treatment capability and lack of awareness by residents are raised as problems in most cities.
- Enlightening activities have been promoted but have not shown much results. Making steady efforts like providing repeated explanations over and over again is needed.

Ⅱ. Other urban problems—①

- Running water service is developed to the level of 50 -80 %; sewage service remains at 50 %.
- Septic tanks are used for human waste in many cities. Human waste is transported to facility for its treatment.
- Treatment methods are varied. Sludge after treatment is sold as compost.
- Water contamination caused by waste water discharged from households is worsening. Because infrastructure development for sewage system requires much investments and time, attention is given to drainage facilities installed in each business complex, small scale sewage treatment plant at unit of housing complex (community plant), and household waste water treatment facility on site. Development and popularization of appropriate technologies is demanded.

Ⅱ. Other urban problems—②

- Traffic problems:
  Problems of exhaust gas from automobiles and heavy traffic are worsening in areas outside big cities. Measures concerning exhaust gas control, development of roads, and express operation system for buses are progressing.

- Disaster prevention:
  Flooding occurs in most cities. Infrastructure developments including gutters, land for holding water temporarily when flooding, and installation of pumping facilities are being made.
- In some cities wastes dumped into a river disturb flow of river water. Enlightenment activities for residents like " Do not dump wastes into river ' campaign are being conducted.

Ⅲ. Environmental industry

- As for existing environmental industry, many cities have seen advancement of commercialization in areas like, recycling, waste treatment, and waste water treatment. However technological levels of treatment and contamination prevention/control measures are not clear.
- "To treat wastes into non-toxic" is considered as promising industry in all countries. Expectation for energy conservation audits is strong in Indonesia, Thailand, Vietnam, and China.
- Strong interest is given to treatment of building material wastes, recycle technologies and commercialization in Bangkok.
- In order to gain knowledge and experiences concerning environmental technologies, it is expected to demonstrate effectiveness through implementing cooperative projects and model projects supported by international cooperation and funds of national government, and then to spread them to other cities, and to work on commercialization.

⑭アジア地域の実情報告

・インドネシア スラバヤ市

Common problems in Asian cities

Developed countries:

Advance technology of urban environment

Energy conservation

Developing countries:

Basic needs versus environmental issues

Awareness of the people is growing

Urban development is growing

Surabaya:

Growing concern on environment

Facilitating stakeholders on environmental improvement activities

A message from Surabaya

Togar Arifin Silaban

Surabaya, 18 February 2009

Environmental Issues

Water pollution, solid waste management, air pollution, energy conservation

Human resources,

Technology

Surabaya:

Takakura Home Method (THM): 11,000 units
Environment cadres : 25,000 person
Modified THM
Surabaya as a place to learn environmental concern in Indonesia

Where to go ?

Promote *green lifestyle*
Empowerment of *green politics*
Sharing best practice
International facilitation

Thankyou

UNIVERSITY OF MALAYA
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Urban Environmental Problems

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Contents of Presentation

1. Urban environmental problems in Asia
2. Urban environmental problems in Kuala Lumpur, Malaysia
3. Improvement Plans to remedy the problems
4. Expectations towards Interaction and Cooperation in Asia

Urban environmental problems in Asia

- ❑ Poor air quality - automobile and industrial emissions.
- ❑ Compromised water quality.
- ❑ Urban centers' High Density Population
- ❑ Poor sanitation management
- ❑ Solid waste Generation and Complexity

A major problem in Asia: Solid waste management

- ❑ Lack of Policy, Regulations or Enforcement
- ❑ Lack of organized solid waste collection and Recycling.
- ❑ Illegal dumping of Solid wastes
- ❑ Open dumps and Scavengers
- ❑ Pollution Impact: Gas and Leachate

Arbitrarily dumped solid wastes in a roadside in Nepal

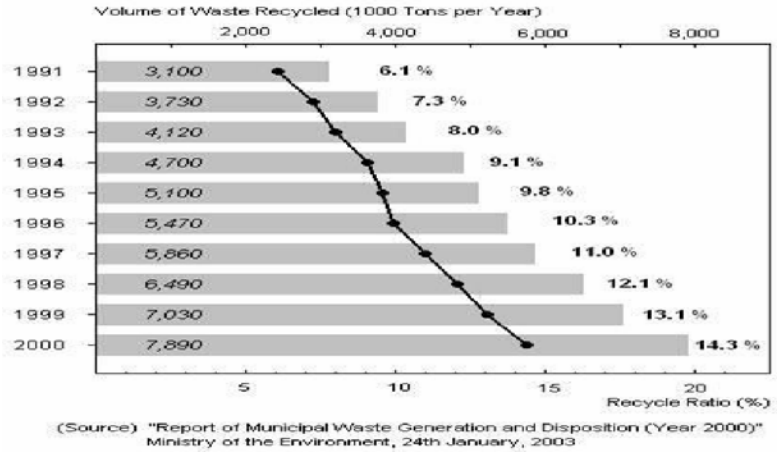
Waste pickers in the Philippines – note methane emissions (grey/blue smoke) in the background

Urban environmental problems in Kuala Lumpur, Malaysia

- ❑ MSW collection and Disposal
- ❑ Pollution – Soil and Water
- ❑ Heavy automobile traffic – noise and air pollution.
- ❑ Occasional haze or Flooding
- ❑ No data base

Issues on waste management in Kuala Lumpur

- ❑ Generates approx. 4000 tonnes of municipal solid wastes (MSW) daily.
- ❑ 95% landfilled
- ❑ Non-existent / poorly strategized programs to encourage 3Rs.
- ❑ No waste separation and thus Low recycling rates (5%).



Low percentage of waste being recycled in Malaysia (1991 – 2000)

Issues on waste management in Kuala Lumpur (cont.)

- ❑ Extensive heterogeneity in solid wastes.
- ❑ Presence of 15-24% plastic
- ❑ Landfills / open dumps are malfunctioning.
- ❑ Methane is passively emitted.
- ❑ Leachate seeps underground or bubbles to the surface.

Heterogeneous Malaysian MSW

Emission of landfill gas from a Malaysian landfill

Leachate bubbling from covering soil in a Malaysian landfill

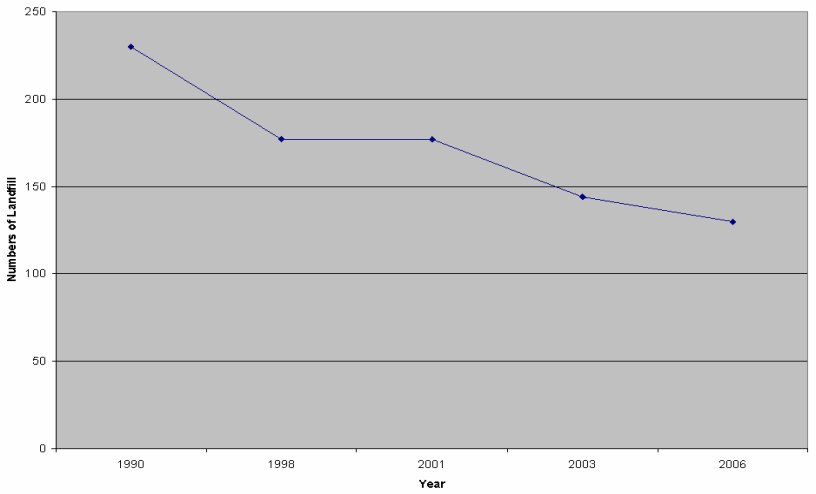
Waste pickers

Wastes with high plastic content from Kuala Lumpur.

Heterogeneous wastes openly dumped outside Kuala Lumpur.

Plans to remedy problems associated with solid waste management

- ❑ All New landfills will be Sanitary Landfills
- ❑ Dumps will undergo Closure and Post-Closure remediation
- ❑ Closure of Dumps causing heavy pollution. 111 of 260 will be closed soon.
- ❑ Incineration will be assessed as a future method for waste disposal.



Number of landfills in Malaysia since 1990.

Introduction of Solid Waste Management and Public Cleaning Act 2007:

- ❑ Federal Government is responsible for solid waste management. Expected implementation in March 2009.
- ❑ Federal Corporation will oversee daily solid waste/public cleaning operations.
- ❑ Encourages the 3Rs, producer responsibility for waste segregation, control of solid waste transport, etc.

Expectations towards change in Asia-Interaction and Cooperation

Would be good to have high impact recycling campaigns, as seen in Singapore

Composting should be encouraged to lessen burden on landfills

ASIAN COLLABORATION

- Need for Asian cooperation in solving Urban problems
- 3R is a potential area of development
- Pollution Control
- Technology Transfer
- Training Personnel

THANK YOU

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