

February 20, 2009

3 R分野におけるアジア各都市の 連携について

Cooperation among Asian Cities in 3R

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Self Introduction 自己紹介

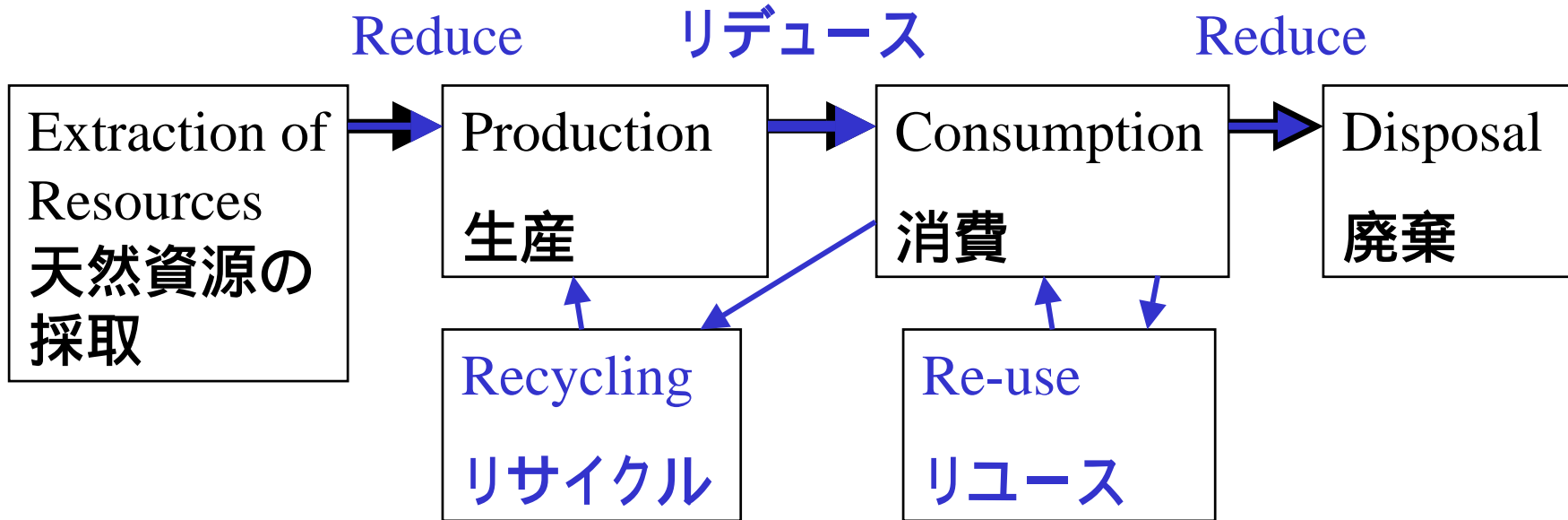
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- An expert contributing to Recycling Based Economy Project conducted by APEC Human Resource Development WG. (2004-2005)
- A member of JICA mission for the Project Formulation Study on the Recycling Industry Development in the Philippines (Oct. 2005)
- A member of expert committee on Formulating International Sound-Material Cycle Society in Central Environmental Council (Nov. 2005-) 中央環境審議会国際循環型社会形成と環境保全に関する専門委員会委員

1. Key concepts and policies for establishing Sound Material-Cycle Society

循環型社会形成に向けた重要な概念

Why should we establish Sound Material-Cycle Society? なぜ、循環型 社会の形成が必要か？



- The economic system of mass extraction, mass production, mass consumption and mass disposal creates many environmental problems. This system should be changed.
- Concept such as Material Cycle Society, 3R and Circular Economy indicate the future direction.

Keys for Reduce

リデュースに向けて (1)

- **Producer 生産者**
 - Cleaner Production, more efficient use of resources クリーナープロダクション
 - Disseminating Information of technology of cleaner production
 - Using price mechanism (ex. Reduce subsidy for fuel, impose tax on resource use, tax reduction or subsidy for investment in cleaner production technology)
 - Ban on using hazardous materials for some specific goods. (example: mercury in dry battery, RoHS) (有害物質の禁止)
- **Service Sector サービス部門**
 - Prohibit free supply of specific goods like shopping bags and tooth brush in hotel, or promote alternatives. 無償供給の禁止など
- **Consumer 消費者 (過剰消費抑制のキャンペーン)**
 - Campaign for reducing over consumption.
 - Bringing shopping bag “my bag”, not using plastic bags.

Keys for Reuse リユース

- Repairing technology
修理技術
 - Electronics **電子・電気製品**
 - Automobile **自動車**
- Discarded parts should be properly treated.
廃棄される部品は、適正に処理される必要がある。



Repairing motors for electronic fan in the secondhand market, Bangkok November 2004.

中古品市場で扇風機の部品を修理。タイ、バンコク。



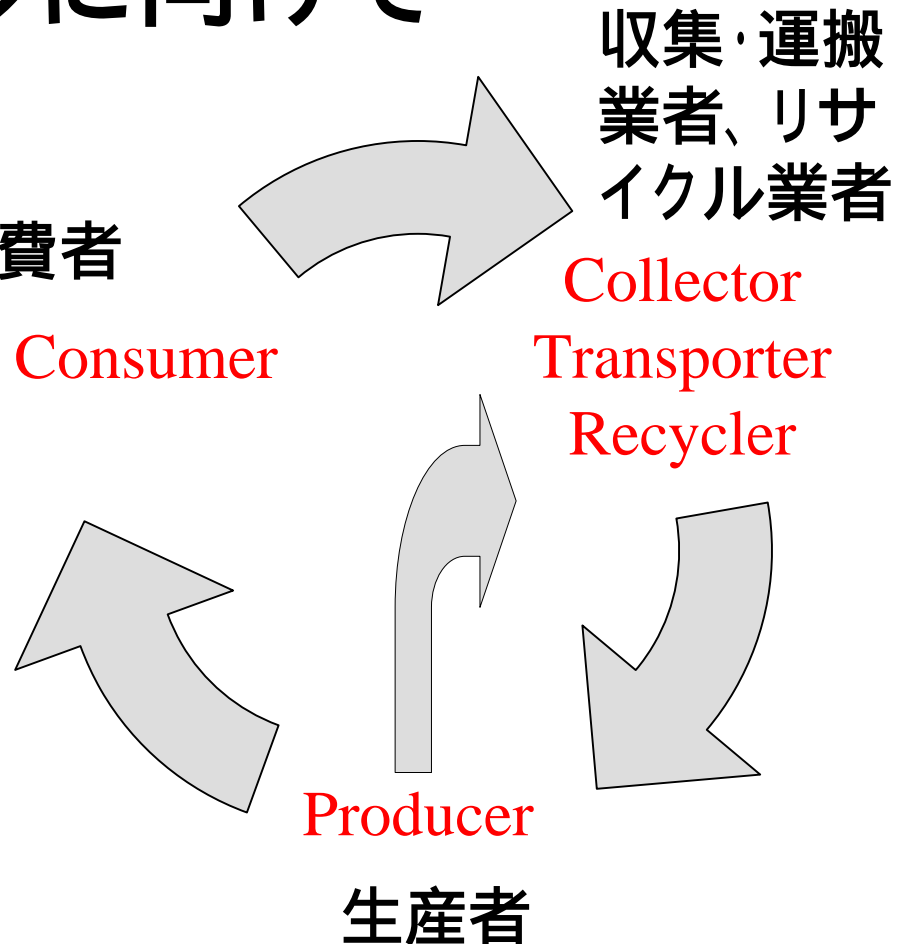
Repair shop of TVs. They are supplied for furnished apartment. Bangkok, November, 2004..

テレビの修理店、バンコク。

Keys for Recycling (1)

リサイクルに向けて

- There are many stakeholders in recycling. Capacity development of each stakeholder is important. It is also important to make coordination among stakeholders.
- さまざまなステークホルダー、それぞれの能力開発とステークホルダー間の調整が重要



Keys for Recycling (2)

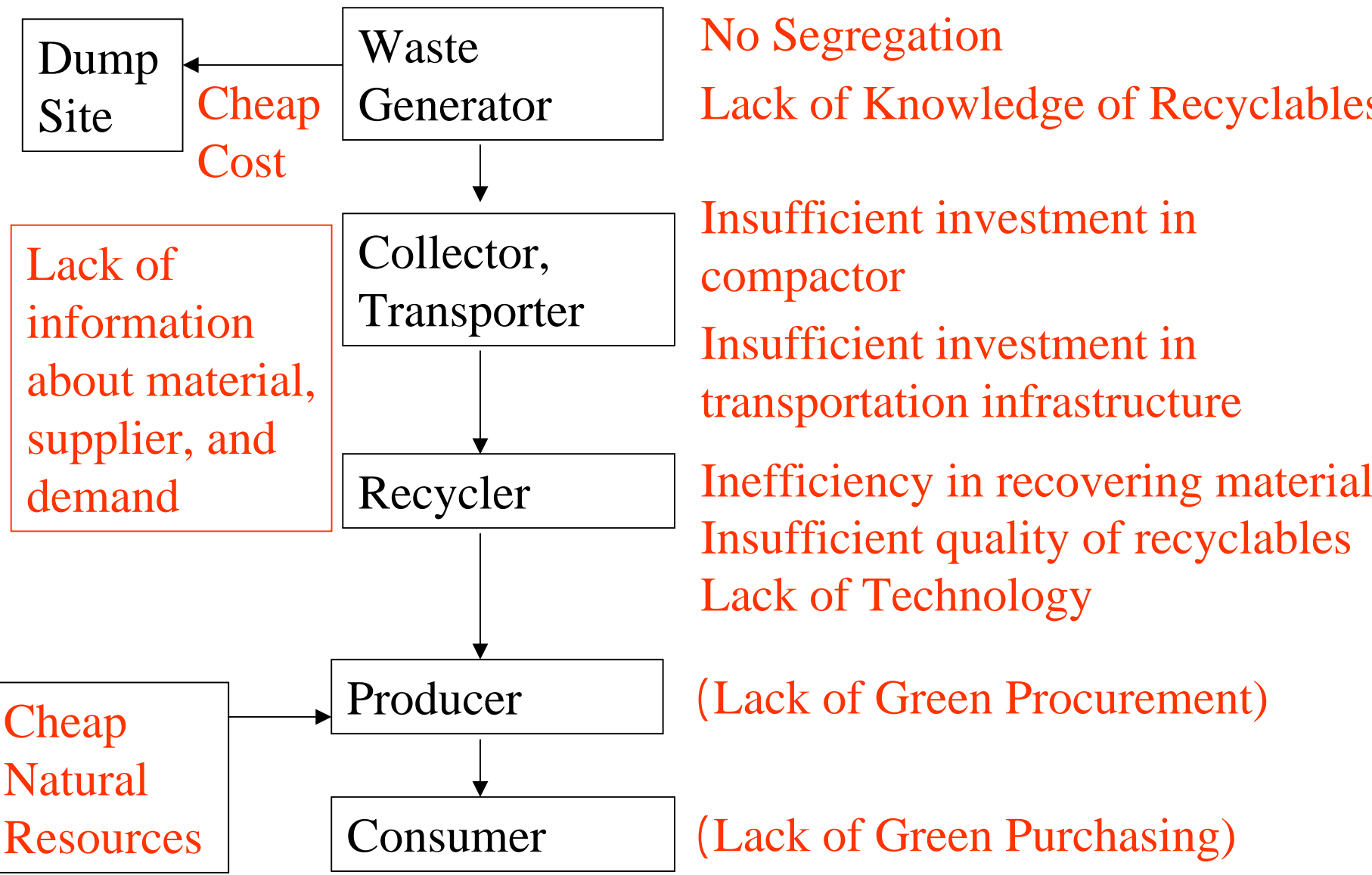
リサイクル

- Recycling industries often cause pollution problem. The government should enforce pollution control regulation to recycling industry. **リサイクル産業で公害問題が発生する場合がある。**
- Cost sharing may need to ensure recycling and proper pollution control. **汚染防止のコスト負担を考えなければならぬこともある。**
 - Segregation, or classified collection at source, transfer the cost of recyclers to waste generator.
 - Laws for promoting recycling in Japan ensure the proper treatment of CFC in air conditioner, and non- recyclable residuals.

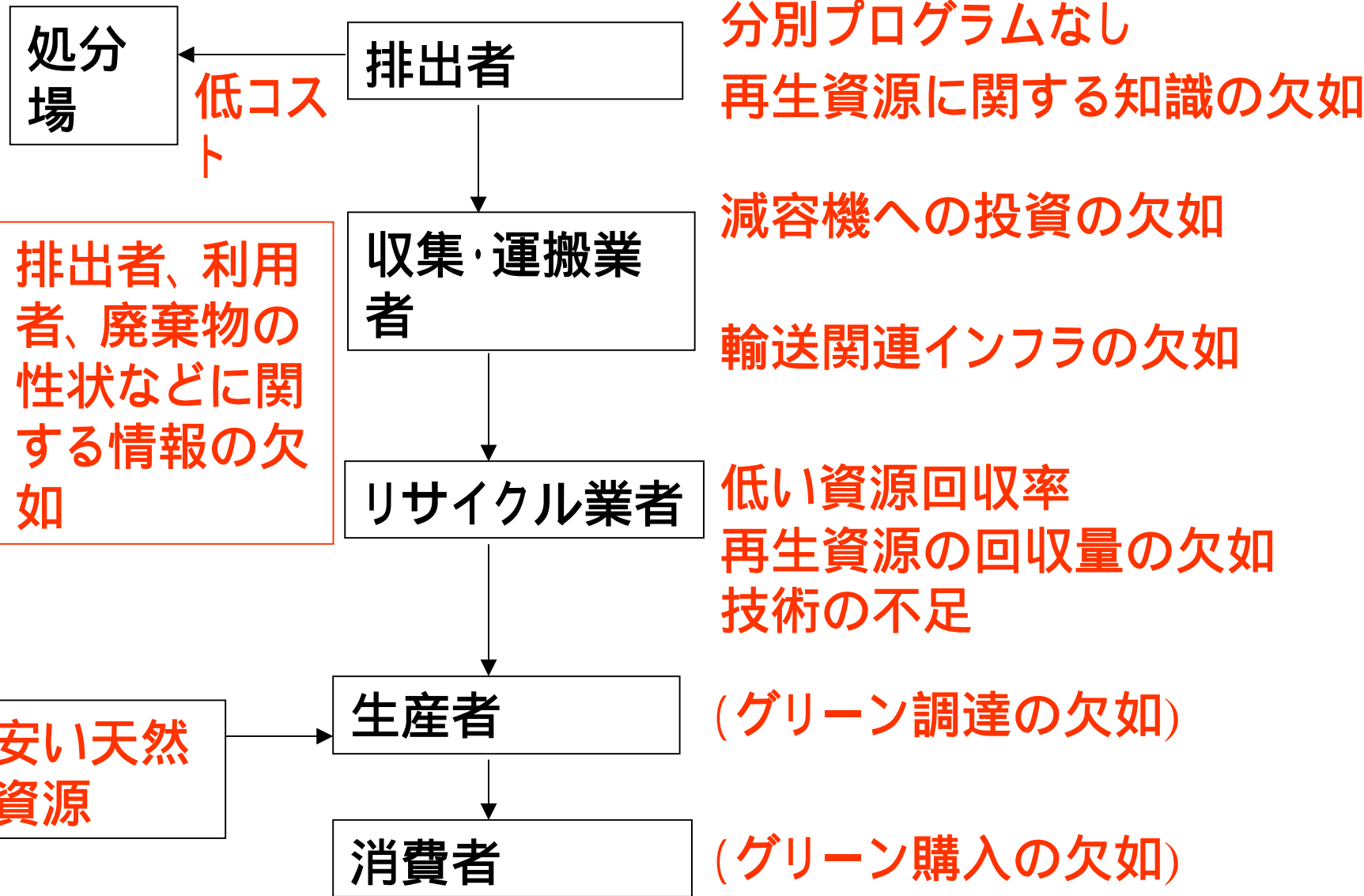
Keys for Recycling (3)

リサイクル

- Extended Producer Responsibility (EPR) is one of the key concept in changing cost sharing mechanism in developed countries. But there are several precondition to apply this principle in developing countries. **先進国では拡大生産者責任の適用が進んでいるが、途上国での実施には、途上国なりの難しさがある。**
- Can producer and importer be identified? **下記の製品について、生産者や輸入者が特定できるか。**
 - faked products (模造品)
 - modified products (改造された製品)
 - products assembled by small shops (小規模店での組み立て品)
 - products imported as bringing goods (携帯品として輸入された製品)
 - Smuggled Product (密輸された製品)



Lack of regulation defining the responsibility of producer, consumer and government for recycling



関係者それぞれの責任、役割を定めた規制の欠如

2. What are roles of city government
in 3R?

3Rにおける市政府の役割

Roles of City Government (1)

市政府の役割

- Roles of city government in promoting 3R varies, depending on the regulations of each country. **各国の規制により、3R促進に関する市政府の役割は異なる。**
But we can find these similar roles across Asian countries. **共通した役割としては、以下の点が考えられる。**
 - Local government is responsible for collection and disposal of household waste. **家庭廃棄物の収集・運搬**
 - Local government may establish some facilities to dispose of industrial waste. **産業廃棄物の処分施設**

Roles of City Government (2)

市政府の役割

- Local government may have the obligation to make regional plan to manage household and industrial waste in the territory. **廃棄物の処理計画の作成**
- Local government have some capacity to facilitate development of industries including recycling industries. **リサイクル産業の育成計画**
- Local government has right to propose to national government on 3R policies **3R政策について、政府に提案する権利**

Informal Waste Collection

インフォーマルな再生資源の収集



E-waste collection in Beijing. 中国・北京で、廃家電等回収して回る (May 2006)。

Buying used paper in Singapore
古紙の買い取り。シンガポール (October 2006.)



What are differences in the role of city government?(1) 相違点

- Malaysia is going to centralize municipal waste management. (Solid Waste and Public Cleansing Act, 2007) マレーシア：一般廃棄物管理を中央集権化
- The degree of contract with private collection and transportation service company may be different. 民間への委託内容が異なる。
 - Singapore includes source separation program into contract with private contractors of waste collection and transportation services, which are in charge of different region in the city.

What are differences in the role of city government?(2) 相違点

- Bangkok Metropolitan Administration has no operation of landfill. Landfill is operated by private companies, with which BMA have contracts.

In the process of cooperation among Asian cities, each participant should be aware of possibilities of differences of obligation and power among cities. 義務と権限を相互に理解しておくことが、協力を進めるには必要。

Opportunities of Cooperation (1)

協力の可能性

- To share the current problems in waste management and promoting 3Rs, and to share policies. **現在の問題、政策についての情報の共有**
 - Example: When source separation program is implemented, informal waste picker collect valuables from recycling bin. **インフォーマルセクターによる資源ゴミの収集**
 - Sometimes, past experiences is useful for developing countries **過去の経験が役に立つことも。**

Opportunities of Cooperation (2)

協力の可能性

- To analyze the incentive structure in each cities. Changes of internal or external incentive system may be a key in promoting 3R. **インセンティブ構造の分析**
 - What is the basis of the allocation of budget for waste management in local government? **廃棄物分野への予算配分の基準は？**
 - Does the reduction of waste by 3R lead to reduction of budget allocation, and not to allocation of 3R campaign?

Opportunities of Cooperation (3)

協力の可能性

- To share the process to formulate policies and get involvement of stakeholders. 政策形成過程や関係者の参加を得る手法を共有
 - Examples from Tokyo 例
 - Destroying fixed waste bins and introducing fixed time collection before Tokyo Olympic. 固定ゴミ箱の撤去
 - Introducing source separation program 分別収集の導入
 - The argument of “Tekisei-shori Kon-nan Butsu”, or “difficult waste ” 適正処理困難物に関する取り組み

3. Observations on Source Separation Program 分別収集に関して

分別収集

- 分別収集は、これまであまり行われてこなかった。
 - 収集前のゴミ捨て場や収集・運搬の段階で有価物を抜きとることが一般的に行われてきたため、分別収集の必要性があまりなかった。
- コンポストの製造、有価物の回収の促進を図るため、分別収集を始めるところが出てきている。



フィリピンのマリキナ市では、リボンを袋につける方法で、生分解性のゴミとそれ以外を分別収集。定時収集も実施。

JICAの支援でベトナムのハノイで始まった分別収集。生ゴミはコンポスト工場の原料になる。(2007年7月)



Source Separation Program (1)

- I had several opportunities to see the presentation of local governments in Japan on source separation program. I also had several opportunities to review international cooperation from Japan in source separation program. It is my observation that these presentation and cooperation made too much stress on communication to waste generator or citizens, who shall dispose waste as segregation manner. **分別に関する国際協力では、市民への意識啓発に重点が置かれている。**

Source Separation Program (2)

- I felt they are lack of two important aspects. **2つの重要な側面が、落ちていると思われる。**
 - How to change collection and transportation system? **収集・運搬方法をどのように変えたか。**
 - How to coordinate with waste users? **再生利用を行う業者との調整**
- One of typical failure of implementing source separation is lack to separate collection system. If residents see waste collector transport sorted waste at once, residents will not cooperation in source separation. **市民が分別しても、収集・運搬で一緒に集められている事例も。**

Source Separation Program (3)

- The other typical failure is lack of communication with users of waste. It is necessary to get consultation with them, because there are gray zone of recyclable waste. 分別の実施に当たって、再生利用する業者との調整が必要。例：プラスチックでコーティングされている紙など。
 - Example: Extended polystyrene or Styrofoam, carbon copy paper, paper coated with plastics, plastics coated with metals
 - If you got question from citizens, can you answer whether they are recyclables or not, without any consultation to waste users?

A Feature of Japan in implementing 3R

日本における3R実施の特長

- One of feature of Japan in implementing 3R is existence of industrial associations specializing recycling. **日本の3Rの実施の特長として、さまざまな業界団体の存在がある。**

Name of Association 協会名	設立年Year of Establishment
Plastic Waste Management Institute プラスチック処理促進協会	1971
Steel Can Recycling association スチール缶リサイクル協会	1973
Aluminum Can Recycling Association アルミ缶リサイクル協会	1973
Paper Recycling Promotion Center 古紙再生促進センター	1974
Iron and Steel Recycling Institute 鉄リサイクル工業会	1975
Clean Japan Center クリーン・ジャパン・センター	1975

Background of establishment of industrial association 業界団体設立の背景

- Establishing industrial association was responses to hike of resource price and argument of “difficult waste” around 1970. 業界団体の設立の背景には、資源価格の高騰と、東京となどによる適正処理困難物に関する議論がある。
- Local governments including Tokyo Metropolitan government were seriously argued that the producers should be responsible for treating and disposing difficult waste, which local governments had no technology or bear high cost to treat or dispose. Example: home appliances, tire, automobile, plastics.

Conclusion (1)

- There are possibilities of cooperation among Asian Cities on promoting 3R. **アジアの都市間で3R分野で協力を進める意味はある。**
- To understand other cities' efforts and obstacles, it is better to understand the responsibility and power of each cities. **他の都市の取り組みや課題を理解するために、各都市の責任や権限について理解する必要がある。**

Appendix

Some Interesting Initiatives in
Asia, other than Japan

日本以外のアジア地域における
興味深い取り組み

Markina City in the Philippines

- Markina City in Manila is conducting separate collection of degradable and non-degradable wastes. Non-degradable waste is transferred to Material Recovery Center and recovered recyclable materials.
- Buy back center is operated for the people who is not used to go junk shop.
- Per capita cost for waste management of Markina City is one half of other cities in Metro Manila



Green ribbon indicate degradable waste

Buy Back Center



An Innovative Junk Shop in Thailand

- Wongpanit
 - A company collecting recyclable waste.
 - Starting from individual collection of recyclable waste, in Pitsanuluk in 1974.
 - Investment in compactor and other facilities.
 - Certified ISO14001.
 - Franchise: making network of more than 100 junk shops in Thailand.
 - Advertisement of purchasing price of recyclable waste in the front of shops and internet.
 - Waste Bank Program conducted with elementary schools.



Advertisement of purchasing price. ↑

Compactor for used paper. →





Weight scale in a Junk Shop Park in Beijing, July 2002.



Cutting machine in Collectors park in Yinchuan, June 2005.

Junk Shop Park in China

- Markets where tens of junk shops are located are formulated.
- A state company provides land to junk shops and supervises their operation.
- Weight scale and other facilities are jointly used.

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