

Promotion of Sound Material Cycle Society

Hideto Yoshida

Director General, Waste Management and
Recycling Department, Ministry of the
Environment, Japan

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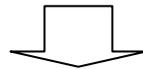
Outline

1. Japan's Experience
2. Development of the 2nd Fundamental Plan for Establishing a Sound Material Cycle Society
3. Promotion of the 3R Initiative
4. Activities in Asia
5. Discussion Points on the 3Rs towards the G8 Process

1. Japan's Experience

Japan Was Faced With Serious Waste Issues

- Past policy measures of waste management were far from adequate. A “sweep the trouble under the carpet” attitude prevailed.
- The “cheaper but worse” style was common in waste treatment.



Huge-scale illegal dumping of waste Accumulation of hazardous waste such as PCB

[Improper waste management
by open incineration]



[Huge-scale illegal waste dumping]

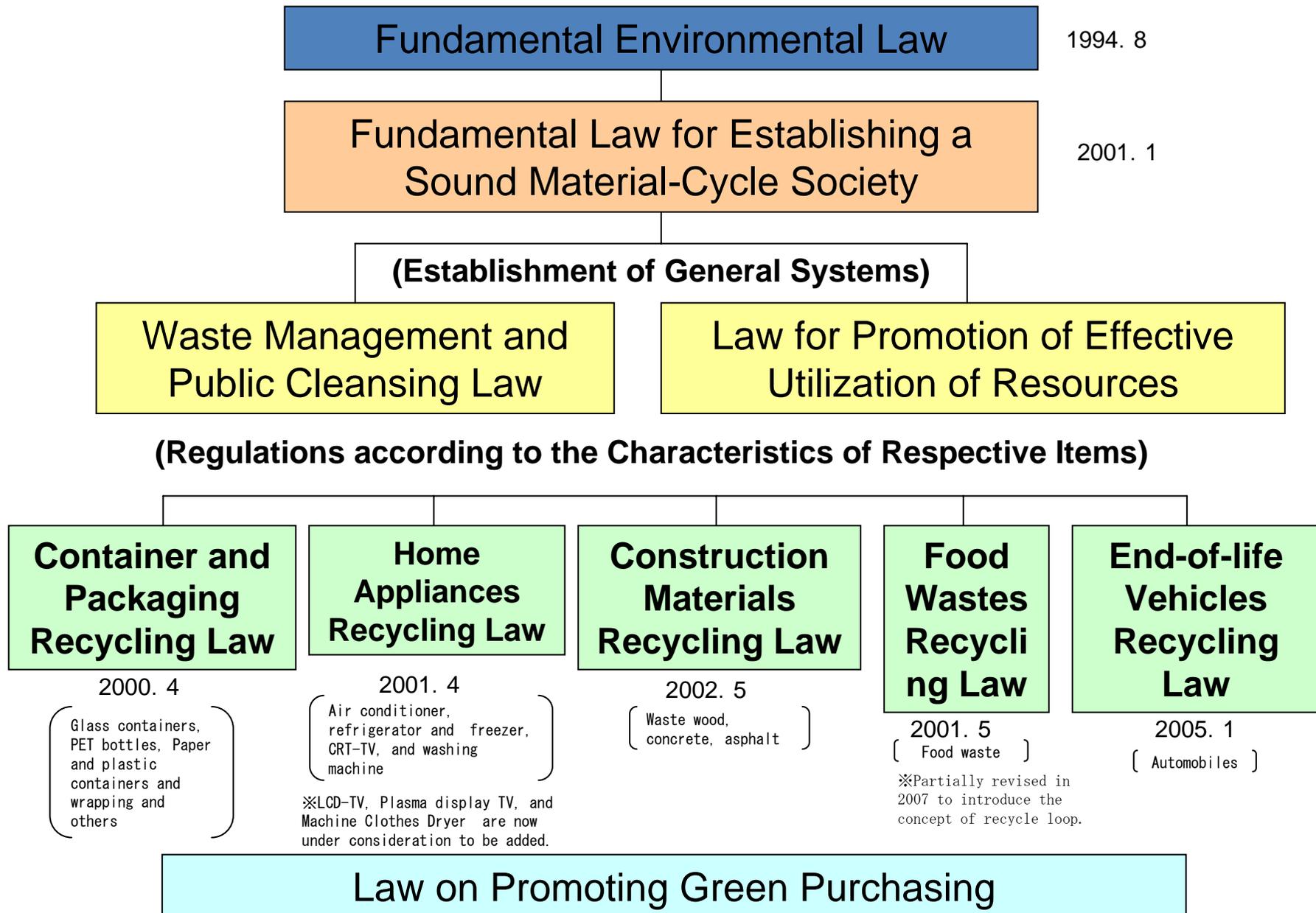


[Improper storage of PCB waste]



Source: Ministry of the Environment

Legislative Framework to Establish a Sound Material-Cycle Society



2. Development of the 2nd Fundamental Plan for Establishing a Sound Material Cycle Society

Overview of the 2nd Fundamental Plan for Establishing a Sound Material Cycle Society

Current situation and Issues

- All three indicators; “resource productivity”, “cyclical use rate” and “final disposal amount” improves towards year 2010 targets set by the 1st fundamental plan and are expected to achieve the targets. However, reduction of household waste progresses rather slowly.
- Need to respond to global environmental issues such as worldwide resource limitation as well as global warming
Thus, it is necessary to further develop sound material cycle societies both domestically and internationally by implementing the 3Rs thoroughly

Mid-to-long term image of SMS

- **Realize “Sustainable Society” by integrating with activities to realize “low carbon society” and “nature harmonious society”**
- Realize “Stock-based Society” by stocking and utilizing goods to achieve wealthy society

Regionally-characteristic SMS(Spheres of sound material cycle) , Lifestyle along the concept of Mottainai, Collaboration and partnership between stakeholders, and dissemination of the 3Rs into economic activities including manufacturing

Indicators and targets

【1 Material Flow–based Indicators】

(1) Numerical target setting (FY 2015)

- ① 「Input」: Resource Productivity → 420 thousand yen/ton (60% increase from FY2000)
- ② 「Recycle」: Cyclical use Rate → about 14-15% (40-50% increase from FY 2000)
- ③ 「Output」: Final Disposal Amount → about 23 million tons (about 60% reduction from FY2000)

(2) Setting **supplementary indicators** such as indicators on Collaboration with the action for low carbon society

(3) Setting **indicators to monitor progress** such as “Hidden flow and TMR” to promote awareness on global environmental problems

Activities of stakeholders

○Partnership and Collaboration

Mutual collaboration of every stakeholders to establish sound material cycle society

○Citizens

- Campaign of life style change such as “my chopsticks” and “my bag”

○NGO/NPO and Universities and others

- Interface of collaboration and partnership
- Accumulation of knowledge and reliable information

○National government

- Partnership among stakeholders and implementation of nation-wide activities
- ① **Integrated efforts with low carbon and nature-harmonious society** (waste power generation and biomass utilization) 、
- ② **Establishment of “spheres of sound material cycle”**, ③ **National campaign on the 3Rs**, ④ **Promotion of sound material cycle business** through various measures such as green purchasing, ⑤ **Development of 3R mechanisms** focusing on reduction, ⑥ **Advanced 3R technology and system**, ⑦ **Information gathering and development of human resources**,
- ⑧ **Establishment of international sound material cycle society based on action plan to promote global zero waste societies, East Asia vision of sound material cycle society, or improving resource productivity**

○Businesses

- Prevention of illegal dumping and implementation of the 3Rs
- Advanced waste management, inter-industrial collaboration

○Local governments

- Partnership with stakeholders and implementation of nation-wide activities

【2 Indices related to effort】

(1) Numerical target setting

- ① Reduction of municipal solid waste
- ② Reduction of final disposal of industrial waste
→ About 60% reduction from FY 2000
- ③ Changes in awareness and actions of citizens
→ awareness: about 90% actions: about 50%
- ④ Promotion of Sound Material Cycle Businesses
→ Double the market for Sound Material Cycle businesses from FY 2000

- (a) Waste generation per capita per day
- (b) Household generation per capita per day
- (c) Generation of commercial waste

(2) **Indicators to monitor progress of stakeholders efforts such as “refuse rate of plastic bag” and “ranking of municipalities active in the 3Rs”**

The enhancement of indicators under the new Fundamental Plan for Establishing Sound Material Cycle Society (material flow based indicators)

the direction of enhancement

- 1 Setting new quantitative target and set 2015 as target year
- 2 Measuring the progress in integrated development of actions towards low carbons society and material cycle society
- 3 Capturing environmental impact derived from resource extraction / utilisation and the amount of cyclical resources trade through introducing international views into indicator system

the 1st Fundamental Plan for Establishing Sound Material Cycle Society

- 1 「Input」: Resource Productivity
 - GDP / Natural resources
- 2 「Recycle」: Cyclical use Rate
 - Amount of cyclical use/ Amount of cyclical use+natural resources
- 3 「Output」: Final Disposal Amount
 - Final disposal amount of waste

supplementary measurements by items (by resource types:fossil, metal, nonmetal mineral or biomass, and domestically extracted or Imported) and imported/exported waste

enhancement - strengthening

the 2nd Fundamental Plan for Establishing Sound Material Cycle Society

1 Indicators with target setting

- (1) 「Input」: Resource Productivity “GDP / Natural resources”
- (2) 「Recycle」: Cyclical use Rate “Amount of cyclical use/ Amount of cyclical use+natural resources”
- (3) 「Output」: Final Disposal Amount “Final disposal amount of waste”

2 Supplementary indicators with target setting

- (1) Resource productivity not including resource input of soil and stone
- (2) Collaboration with the action for low carbon society
 - ① the amount of reduction by the measures of waste sector to reduce GHGs emission
 - ② GHGs emission associated with waste sector and fossil fuels to be substituted by waste power generation (measurement)

3 Indicators to monitor progress

- (1) Resource productivity related to fossil fuels
- (2) Input rate of biomass resources
- (3) Hidden Flow and TMR (Total Material Requirement)
 - (the example of estimation: about 21 times larger than the import of metal resources)
- (4) Indicators considering international resource circulation
- (5) Resource productivity of each industrial sector

4 Future challenges

Specify as future challenges: the development of inventories in each country related to calculation of environmental impact and setting conversion factors to be shared internationally

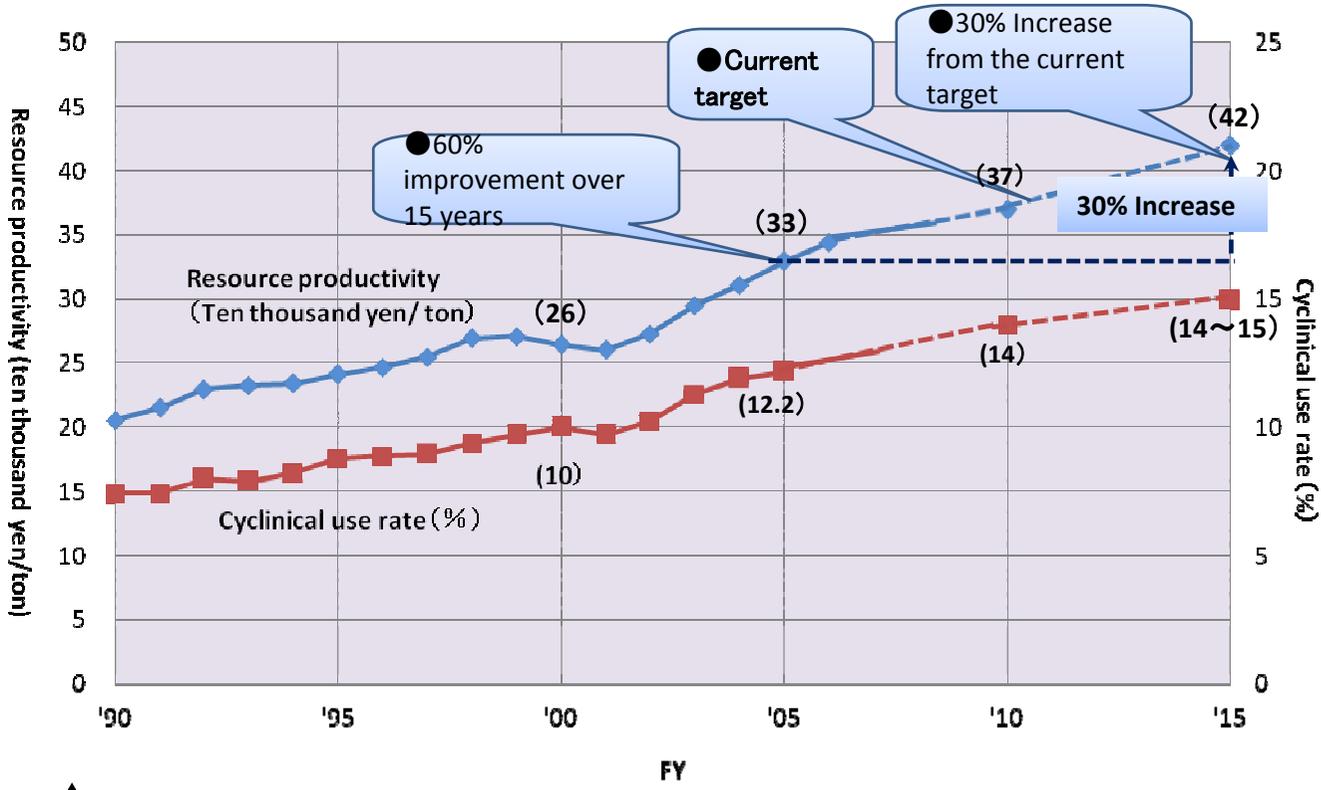
Hidden Flow and TMR

Set indicator to be considered as a standard to quantify sustainability and global environmental impact associated with resource use

Aiming to reduce environmental impact in other countries due to resource use of Japan through reducing the extraction of new resources of nature and promoting material recovery of metal resources

Material Flow-based Indicators – Indicators with target setting –

Resource Productivity and cyclinical use rate



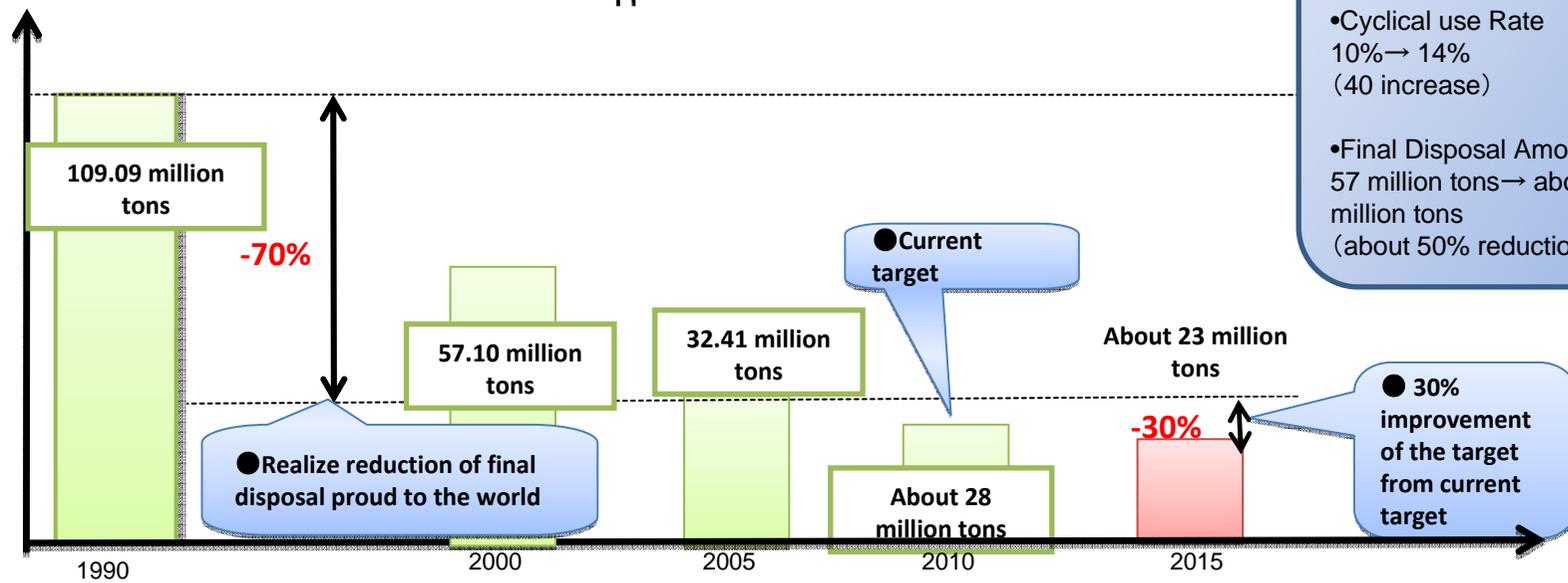
The 2nd Plan

- 2000→2015
- Resource Productivity 260 thousand yen/ton → 420 thousand yen/ton (60% increase)
- Cyclinical use Rate 10% → about 14-15% (40-50% increase)
- Final Disposal Amount 57 million tons → about 23 million tons (about 60% reduction)

The 1st Plan

- 2000→2010
- Resource Productivity 260 thousand yen/ton → 370 thousand yen/ton (40% increase)
- Cyclinical use Rate 10% → 14% (40 increase)
- Final Disposal Amount 57 million tons → about 28 million tons (about 50% reduction)

Final disposal



The enhancement of indicators under the new Fundamental Plan for Establishing Sound Material Cycle Society (Indices Related to Efforts)

the direction of enhancement

1. Dividing indicators into “Indicators with target setting” and “Indicators to monitor progress, the system of Indices Related to Efforts is enhanced and strengthened
2. Set indicators aiming to the enhancement of reduce and reuse such as “Reducing the quantity of municipal solid waste” and “the delivery rate of refillable products” etc..
3. Strengthen indicators related to the action of local governments, who take important roles for establishing sound material cycle society, such as **high-ranked municipalities’ action of the 3Rs** and the number of environmental education and mutual exchange events

the 1st Fundamental Plan for Establishing Sound Material Cycle Society

- 1 Changes in Thoughts and Actions to Establishing a Sound Material-Cycle Society
 - Thoughts and actions directed at waste
 - 2 Reducing the Quantity of Waste
 - (1) Reducing the quantity of municipal solid waste
 - (2) Reducing the quantity of industrial waste
 - 3 Promoting Sound Material-Cycle Society Businesses
 - (1) Promoting green purchasing
 - (2) Promoting environmental business management
 - (3) Expanding sound material-cycle society business market
- Others (ref.)
For individual items and business types, the targets that are set based on their respective recycling laws and programs should be achieved.

enhancement - strengthening

the 2nd Fundamental Plan for Establishing Sound Material Cycle Society

1 Indicators with target setting

- (1) Reducing the Quantity of Waste
 - a. Reducing the quantity of municipal solid waste
 - b. Reducing the quantity of industrial waste
- (2) Changes in Thoughts and Actions to Establishing a Sound Material-Cycle Society
- (3) Promoting Sound Material-Cycle Society Businesses
 - a. Promoting green purchasing
 - b. Promoting environmental business management
 - c. Expanding sound material-cycle society business market
- (4) steady implementation of **individual** recycling laws

2 Indicators to monitor progress

- (1) market size of rental and lease service, the delivery rate of refillable products
- (2) refuse rate of plastic bag (use rate of **reusable bag**)、the sales of disposable goods (ex. Imported disposable chopsticks)
- (3) the size of used product market, the use rate of reusable bin
- (4) the number of stadium which introduced “reuse cup” etc..
- (5) the number of local Fundamental Plan for Establishing Sound Material Cycle Society
- (6) the implementation rate of local governments charging waste management, **high-ranked municipalities’ action of reduce**
- (7) the number of facilities for material recovery (recycle plaza etc..)
- (8) recycle rate of municipal solid waste, **the amount of group collection, high-ranked municipalities’ action of recycle**, the implementation rate of local governments conducting sorted collection of containers and packaging, the amount of sorted collection of each container and packaging
- (9) the number of environmental education and mutual exchange events organized by local governments, the application number to **support program for local action to establish sound material cycle society**

Japan's Contribution to Establish International Sound Material Cycle Society

International movement of recyclable resources

Current situation : **Increase in world wide waste generation** by economic development of each country including those of Asia
Rapid increase in transboundary movement of recyclable resources because of the progress of recycling and increase in resource demands

→Possible environmental pollution caused by improper treatment or cyclinical use of recyclable resources (such as E-waste issues)



Japan's contribution to establish international sound material cycle society

Development of international cooperation such as "**New Action Plan to Promote Global Zero-Waste Societies**" to promote the 3Rs in Asia in the world

○ Dissemination of intuitions, technologies and experience of the 3Rs of Japan

World-wide promotion of the 3Rs from Asia to Africa through various measures including assistance of 3R National Strategy Making, international cooperation to establish Eco-towns, and promotion of safe and sanitary treatment of night soil.

○ Realization of Sound Material Cycle in East Asia

- Support bilateral policy dialogue and multilateral process towards making "**Vision of a Sound Material Cycle Society in East Asia**"
- Share basic understanding on the concept of the 3Rs

- (1) Build a sound material-cycle society in each country
- (2) Develop and reinforce activities to prevent the illegal trade of wastes
- (3) Then, facilitate utilization of recyclable resources through international trade

○ Asian Information and Research Network on the 3Rs

Support the 3R efforts of each country by sharing information on policy and experience of the 3Rs

○ Contribution to efforts to improve resource productivity

- Take a leadership in the G8 in promoting the 3R Initiative such as improving resource productivity
 - Promote international collaborative research on material flow-based indicators such as resource productivity by taking environmental impact assessment into account
- Support the OECD's work on material flow and resource productivity
→Support UNEP International Panel on Sustainable Resource Management

Asia and other regions

G8 and others

3. Promotion of the 3R Initiative

3R Initiative

- ◆ Agreed by Heads of State at the G8 Sea Island Summit in the U.S. in June 2004 as an effort to construct a sound material-cycle society through reduction, reuse, and recycling (3Rs) of waste.
- ◆ Launched at Ministerial Conference on the 3R Initiative in April 2005
- ◆ Senior Officials Meeting held in March 2006
- ★ St. Petersburg Summit in July 2006
 - Agreed to set targets as appropriate taking account of resource productivity

Objectives of the 3R Initiative

- 1 Promote the 3Rs in each country
- 2 Lower barriers to international flow
- 3 Promote cooperation among stakeholders
- 4 Promote science and technology suitable for the 3Rs
- 5 Cooperate with developing countries

Senior Officials Meeting on the 3R Initiative ,
October 2007 (Bonn, Germany)

○ Confirm the progress of the 3R-related
efforts in each country

○ Japan proposed the future directions of the
3R Initiative



March 2008 The 2nd Asia 3R Conference
(Tokyo, Japan)

May 2008 G8 Environment Ministers Meeting
(Kobe, Japan)

July 2008 G8 Summit (Hokkaido Toyako)

The Second Senior Officials Meeting on the 3R Initiative

(Place and Date)

Bonn, Germany October 4th–6th, 2007

(Countries participated)

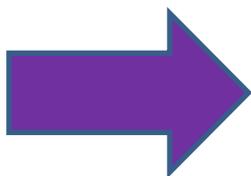
G8 countries and 10 countries including developing countries from Asia, Africa and Latin America

(Overview of the result)

The participating countries confirmed the progress of the 3R Initiative. The concept of the 3Rs has been widely shared since the launch of the 3R Initiative in 2005. The progress made is not only limited among the G8 countries but also among other countries and regions including those in Asia through collaborative efforts with international organisations.

Future directions of the 3R Initiative was proposed by Japan as the chair of the G8 in 2008

- Prioritized implementation of the 3R policy and increase in resource productivity
- Pursuit of co-benefits with measures to reduce green house gas emissions
- International collaboration towards capacity development of the developing countries and others.



**Proposal of Actions for Further Promotion of the 3Rs
towards G8 Environment Ministers Meeting**

Development of OECD Council Recommendation on Resource Efficiency

OECD EPOC is now discussing about a new Council Recommendation on Resource Efficiency. The new recommendation will be endorsed at OECD Environmental Ministers Meeting in April 2008. It is likely to recommend OECD member countries to implement the following:

- Analysis of Material Flow and its environmental impacts (Development and utilization of indicators for evaluation, development of data and so on)
- Policy for improving resource efficiency (Consideration of use of material flow information for planning purpose including target setting, life-cycle approach including the 3Rs)

UNEP (United Nations Environment Programme) International Panel on Sustainable Resource Management

- Accumulation of scientific knowledge towards sustainable use of natural resources
- Established by UNEP in November 2007. Panel members: 20 world-renown scientists
- Mission:
 - To accumulate latest information and establish knowledge base on usage of natural resource and its environmental impacts
 - To provide independent scientific assessment on environmental impacts of selected resources and products
 - Capacity development of developing countries
- Theme:
 - Metal resource
 - Biofuels
 - Freshwater resources
 - Capacity development of developing countries



4. Activities in Asia

Promotion of the 3Rs in Asia

Problems

- Increasing quantities and diversifying qualities of wastes
- Transboundary movement of waste and circulative resources
- Soaring resource prices

Approach

Promotion of the 3Rs (Reduce, Reuse, Recycle) and appropriate management of wastes
 ⇒ More efficient use of resources and materials, and reduction of environmental impact

Establish a Sound Material Cycle Society in Asian region as a Win-Win solution

Held Policy Dialogues in Asia

Asia 3R Conference (October 2006, Tokyo,)
 Eco-Asia 2007 (September 2007, Fukuoka)

Supporting the formulation of 3R promotion strategies in individual countries

Supported the formulation of 3R promotion strategies in Thailand, Bangladesh, Vietnam and Indonesia.
 · JICA Malaysia Waste Reduction Plan Survey

Disseminate Japan's experience

Published a report summarizing Japan's experience in waste and recycling resources

E-waste measures

· Implemented regional action plans for e-waste appropriate management in Asia and Pacific.
 · Constructing appropriate used goods recycling systems in Asia.

Prevention of illegal export and import

Asian network for the prevention of illegal export and import of hazardous wastes
 · Formulating international guidelines to ensure appropriate export and import

Development of Hub for accumulating information and technology Development of research network

· Support establishing 3R Knowledge Hub
 · Support Expert Meeting on Waste Management in Asia-Pacific Islands

Activities

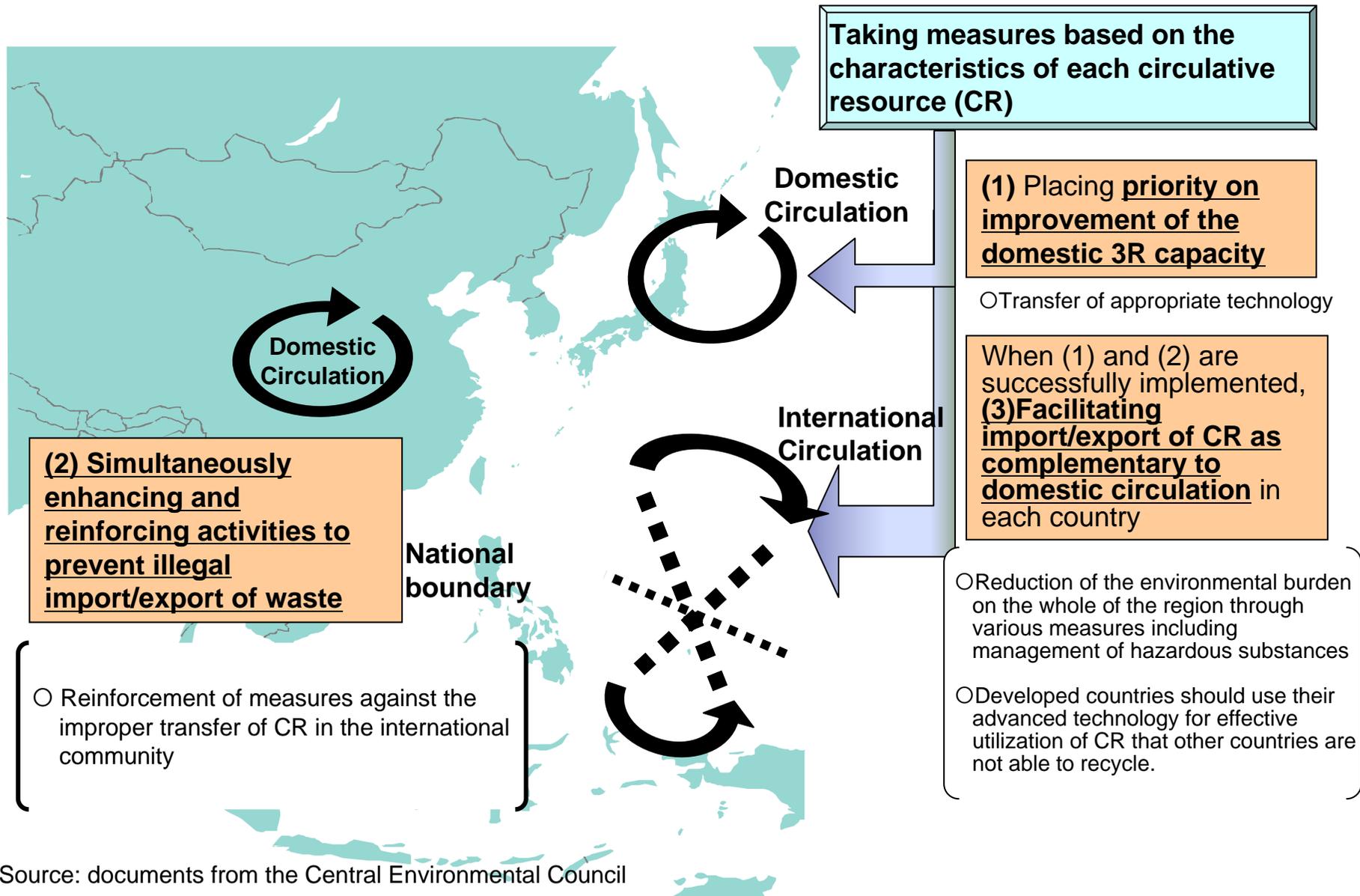
Regional Forum on Environment and Health

Thematic Working Group on Solid and Hazardous Waste in August 2007
 Japan act as the TWG chair

Collaboration with international organisations

United Nations Environment Program (UNEP), Economic and Social Commission for Asia and the Pacific (ESCAP), United Nations Center for Regional Development (UNCRD), Basel Convention Secretariat, Asia Development Bank (ADB), Institute for Global Environmental Strategies (IGES)

Basic Approach toward an International Sound Material-Cycle Society



Source: documents from the Central Environmental Council

Regional Forum on Environment and Health in Southeast and East Asian Countries

1. Objective of the forum

The Ministerial Regional Forum on Environment and Health is established at the first session in Bangkok, Thailand, in August 2007, aimed at:

- Effectively addressing environmental and health issues through enhanced regional abilities, and
- Promoting the implementation of regional environmental and health strategies and regulations.

The secretariats was established at the WHO Regional Office for the Western Pacific, and the UNEP Regional Office for Asia and the Pacific, with the support of Asia Development Bank and others

2. Establishment of Thematic Working Group (TWG)

Thematic Working Groups was established under the Regional Forum, on each of the following themes designated as the key areas for from 2007 to 2009.

- (1) Air quality and noise;
- (2) Water supply, hygiene and sanitation;
- (3) Solid and hazardous waste;
- (4) Toxic chemicals and hazardous substances;
- (5) Climate change, ozone depletion and ecosystem change; and
- (6) Contingency planning, preparedness and response in environmental health emergencies

3. Waste Thematic Working Group

- Chair Country: Japan
- 13 countries from southeast and east Asia and international organisations participate the TWG.
- Consider regional cooperation through analysis of good practices and challenges mainly on urban solid waste and medical waste



The first Waste Thematic Working Group was organized in Singapore on February 28 and 29

- Presentations on good practices of medical waste management in the participating countries

Discussion at the ECOASIA 2007 (1)

◆ **Ministers and high level officials of Asian and the Pacific countries discussed the issue of waste management and the 3Rs at “ECOASIA 2007” in Fukuoka, Japan, in September 2007.**

To overcome “Major challenges for Waste Management and Recycling”

- Establish a sound material-cycle society in each country as well as in the region as a whole
- Increase resource productivity through the encouraging of investment and innovation for proper waste management and recycling
- 3 key approaches for establishing international sound material cycle society

(1) Placing **priority on improvement of the domestic 3R capacity**

(2) **Simultaneously enhancing and reinforcing activities to prevent illegal import/export of waste**

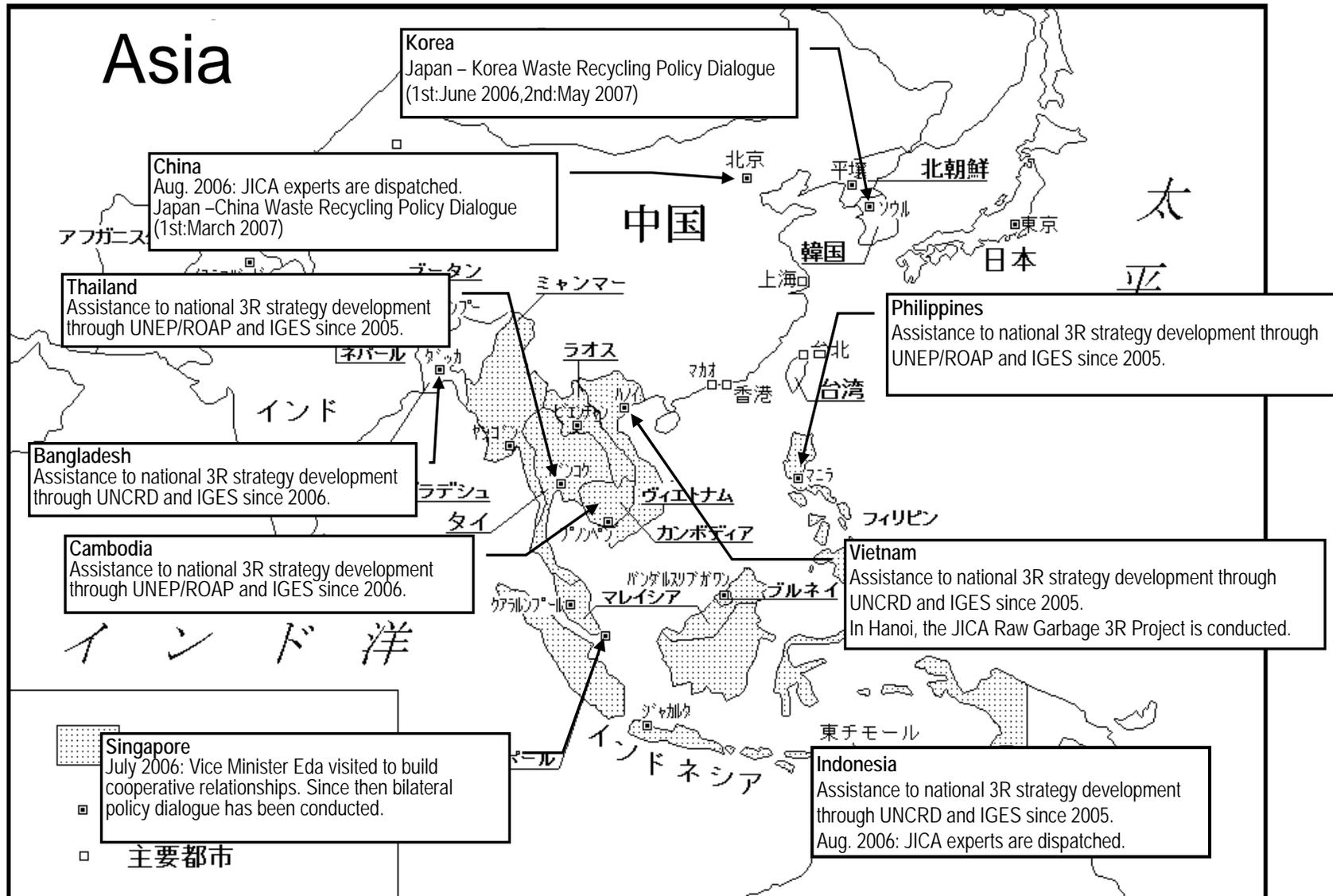
When (1) and (2) are successfully implemented, (3) **Facilitating import/export of CR as complementary to domestic circulation** in each country

Regional Cooperation

- Share a vision of a material-cycle society for the region as well as the formulation of standards for proper waste management and recycling
- Develop knowledge, technological, and educational infrastructures such as *3R Knowledge Hub* to disseminate vital information on policy and technology
- Capacity development through international cooperation and collaborative efforts at the regional level, in addition to individual national and local efforts



Japan's Bilateral Activities for 3Rs



*In Mexico JICA supports the development of national 3R program since 2007.

Actions against Illegal Import/Export of Hazardous Waste

Cooperation with Asian Countries

To prevent illegal trade of hazardous waste, officials from Asian countries in charge of the Basel Convention have formed a network to exchange information on legislation and guidelines

The Asian Network for Prevention of Illegal Transboundary Movement of Hazardous Wastes



○ Organization of workshop

- Operate a website that contains information on pertinent legislation in member countries
- Survey on guideline for distinguishing waste and secondhand goods
- Accumulation of good practices

Environmentally sound management of E-waste in the Asia-Pacific region

- Support Basel Convention's Project on "environmentally sound management of E-waste in the Asia-Pacific region"
- Organize Workshop
- Survey on the amount of E-Waste generation (Thailand, Malaysia and others)



(↑ TV claiming as secondhand goods)



(↑ Boards plotted for export by being mixed with other cargo)



(↑ Outdoor AC unit claiming for reuse purpose)

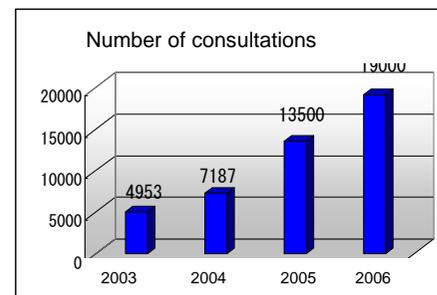
Enhancement of National Monitoring System

To assure the border control, seminar and workshops for exporters, consultation with exporters prior to export/import and cargo inspection in cooperation with custom officials are conducted.

Explanatory meeting of the Japan's Basel Law



Implementation of consultation with exporters



Cargo inspection



Towards a 'Sustainable East Asia'

— Japan's Environmental Cooperation Initiative at the 3rd East Asia Summit (EAS) —

1. Establishing a low-carbon and sound material cycle society, —Harmonization of measures against global warming and pollution prevention, and economic independence—

(1) Under “the beautiful planet 50”, Japan will promote the cooperation in energy saving as expressed in January 2008. For developing countries aiming for harmonization between reduction of green house gas emissions and economic development, Japan will cooperate for mitigation and adaptation of climate change, and promotion of clean energy by policy supports through new “financial mechanism”.

(2) Cooperation for establishing a sound material cycle society

- Through establishing “Asian Information and Research Network on the 3Rs”, Japan will support the 3R efforts of each country by sharing information on policy and experience of the 3Rs.
- For promotion of the 3Rs and environmentally sound management of waste, Japan will receive more than 500 trainees for the next 5 years.

(3) For prevention of environmental pollution such as water and air pollution, Japan will provide financial cooperation of more than 2 billion US dollars in 5 as well as cooperate in training of more than 500 trainees in the next 5 years.

Prime Minister Fukuda announced the initiative in Singapore on November 21st 2007

Japan's Contribution towards Establishment of a Sound Material Cycle Society in Asia

○ Dissemination of intuitions, technologies and experience of the 3Rs

World-wide promotion of the 3Rs from Asia to Africa through various measures including assistance of 3R National Strategy Making, international cooperation to establish Eco-towns, and promotion of safe and sanitary treatment of night soil.

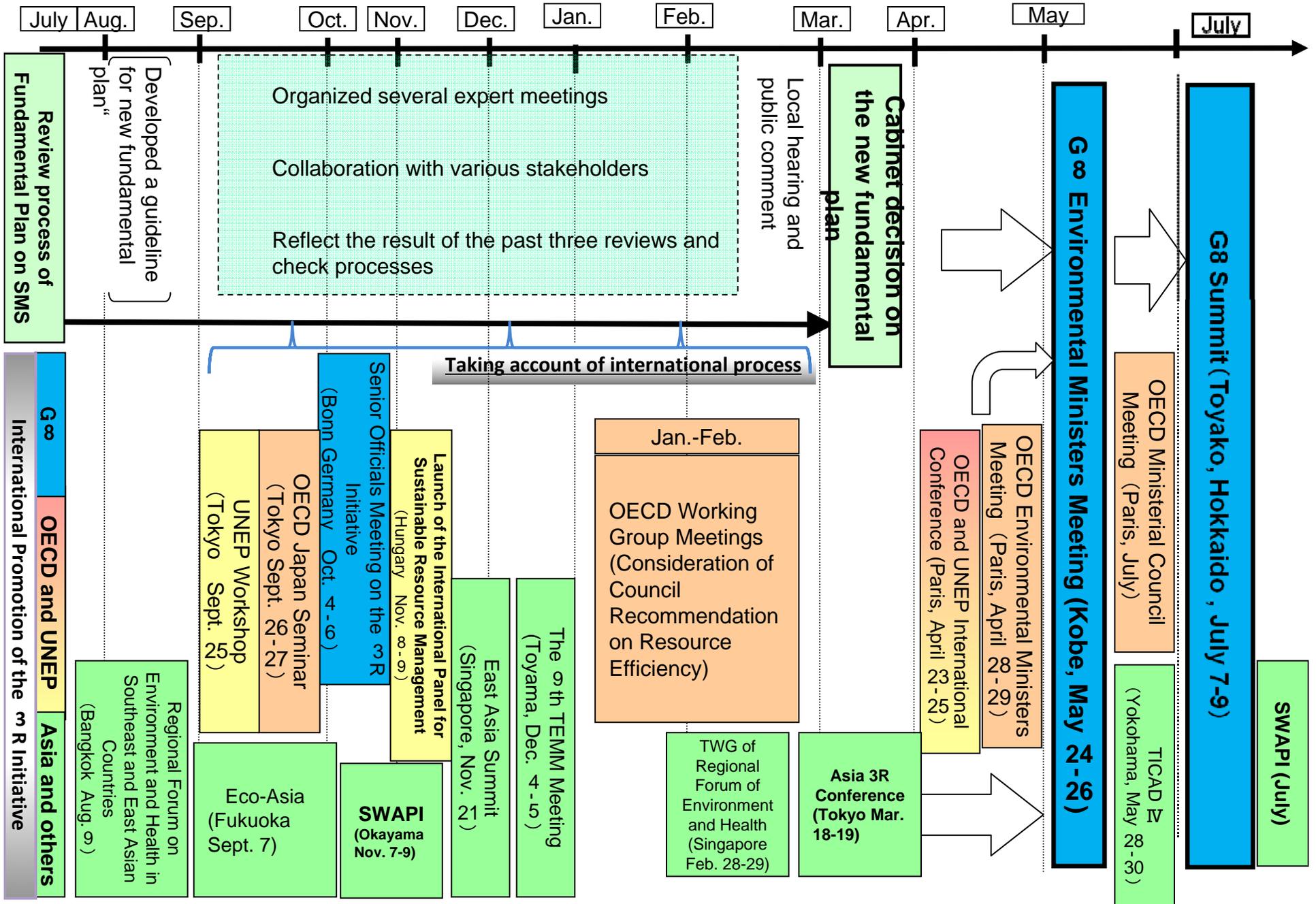
○ Realization of Sound Material Cycle in East Asia

- Support bilateral policy dialogue and multilateral process towards making **“Vision of a Sound Material Cycle Society in East Asia”**
- Share basic understanding on the concept of the 3Rs

○ Asian Information and Research Network on the 3Rs

Support the 3R efforts of each country by sharing information on policy and experience of the 3Rs

Major Schedule of International Promotion of the 3Rs (2007-2008)



Discussion Points on the 3Rs towards the G8 Process

Discussion Points at 2nd Asia 3R Conference

Issue1: **Prioritized implementation of the 3R policy and increase in resource productivity, and co-benefits with measures against global warming**

- Prioritized Implementation of the 3R Policy
- Improving Resource Productivity by Promoting the 3Rs and Setting Targets
- Pursuit of co-benefits with reduction of greenhouse gas emission

Issue2: **Capacity Development to Support the 3Rs through Partnership with Various Actors**

- Development of 3R-related Science and Technology
- Promotion of activities by business, local governments and NGOs
- Promotion of information sharing and environmental education

Issue3: **Collaboration towards Sustainable International Resource Circulation**

- Approach to International resource circulations
- Promoting international distribution of 3R-related goods, raw materials, and products
- Strengthening the collaborative efforts of countries and international organisations