

Executive Summary and Policy Recommendation

Summary of Papers in the Report

Chapter 1 reviews the benefits of 3R from life cycle perspectives. Although the magnitude of benefits of 3R depends on the scenario settings, 3R can contribute to the reduction of GHG emissions.

Chapters 2 to 6 focus on the roles of stakeholders. These chapters show the importance of collaboration among various stakeholders and the significant roles of the government in coordinating stakeholders' activities. Chapter 2 shows the private sectors' efforts under voluntary agreement between government and private sectors in Singapore. Chapter 3 reviews the effectiveness of collection event, which is organized by malls, non-governmental organization and recyclers. Chapter 4 shows the flow of recyclable waste and roles of informal sectors in the collection in Indonesia. Chapter 5 focuses on the informal waste pickers and informal recyclers. It discusses some strategies on how this informal sector can be upgraded, in terms of working condition and pollution control measures. Chapter 6 shows the flow of recyclable waste in Vietnam.

Chapters 7 and 8 review the current situation and roles of industrial standard in recycling system. Chapters 4 and 6 also point out the importance of industrial standard in the context of Indonesia and Vietnam respectively. Limited number of industrial standard for recyclable waste, recycled materials and recycled goods are established in Southeast Asian Countries. It is recommended that action plan to establish industrial standard for promoting recycling should be developed in each Southeast Asian country. Regional cooperation to harmonize the standard is also proposed to reduce transaction cost and to avoid conflicts on the definition of waste.

Chapters 9 and 10 argue the indicators in recycling system. Chapter 9 compares the recycling indicators in e-waste recycling system in Japan, South Korea and Taiwan. Chapter 10 shows the use of material flow analysis in the formulation and evaluation of 3R policy in Japan.

Chapter 11 compares the pathways toward 3R-based waste management in Malaysia, Japan and the Philippines. Chapter 12 discusses the policy challenges on resource circulation faced by Asian countries. Chapter 13 reviews the location of recycling facilities for copper, lead and nickel containing scrap and discusses the necessity of transboundary movement of recyclable waste.

Revised “Mapping document on 3R-related Regulations, Ministries and Programs” is attached in the Appendix, which summarizes the legislations, ministries, and programs on 3R in the region.

Policy Recommendations

In the FY 2009, the WG focused on the implementation of the domestic 3R policies, the roles of and coordination among stakeholders, and the importance of various standards for promoting the recycling industry. In addition, we reaffirm the importance of 3R activities, from the review of studies on Life Cycle Assessment on recycling. The principles on international recycling were also discussed in the WG. Based on the results of the various studies conducted for this year and the discussion of the WG, the following policy recommendations are proposed.

1) The promotion of participation and coordination among stakeholders

Various stakeholders, such as waste generators, collectors, recyclers, users of recycled goods, academic institutions, non-governmental organizations and government agencies, should be involved in the policy making process of 3R and in the implementation of the 3R policy. It is observed that stakeholders in the upstream of waste flow, the waste generators and collectors, are well coordinated in the 3R policy, but only few governments have dialogue with stakeholders in the downstream such as the recyclers and users of recycled goods. Thus, it is proposed that central and local governments should organize stakeholder’s meeting and facilitate dialogue among stakeholders both in the upstream and downstream to find a way to promote 3R and to encourage recycling industries.

2) *The integration of the informal sector in the waste management system*

Informal sector takes important role in recycling especially in developing Asian countries. However, despite their significant contribution in the reduction of waste especially in the urban cities, they have continued to work in an unsafe working condition and have remained in poverty. Also, due to lack of technical skills and financial capacity to invest for improved technology their activities often cause air, water and other waste related pollution. Hence, it is recommended that informal sector should be integrated in the 3R system and to improve their condition by forming them into organizations and or cooperatives and by providing legal, technical and financial support to upgrade their recycling activities.

3) *The creation of economic incentives such as tax reduction and low interest loan*

To encourage participation of the community in the implementation of the 3R programs and to promote the recycling industries, government should introduce tax reduction, low interest loan and other economic incentives for 3R activities.

4) *The development of industrial standards of recyclable wastes and goods*

Industrial standards for recyclable waste, intermediate material and recycled goods should be developed in each country, to promote consumption of recycled goods instead of natural resources. The standards should also be harmonized among countries, to boost international recycling especially in the Asian regions.