

Executive Summary and Policy Recommendation

Background

The 3R (Reduce, Reuse and Recycling) policies have been formulated and applied in the context of waste management. All Asian countries have experienced pollution due to improper waste management, social conflict on the location of landfill sites, and heavy fiscal burden for implementing proper waste management. Resource scarcity is also another driving force in developing 3R policies, as it could increase resource efficiency and reduce the dependence on limited natural resources. 3R policies or circular economy policies are introduced in Japan, South Korea, Singapore and China in a holistic way. Other countries such as Thailand, Malaysia, Philippines, Indonesia and Vietnam are partially implementing or going to apply 3R policies.

3R approach is not only a question of how to segregate garbage at the source and to recover the potential material for sale, but also on how to develop understanding and mutual cooperation among stakeholders to minimize the consumption of natural resources. 3Rs approach should not merely be regarded as a way for waste handling. Successful implementation of 3R policies have also beneficial effect in other areas, such as in generating employment, and improving resource efficiency and productivity.

In Asian region, there are many efforts to implement 3Rs. In fiscal year 2008, the working group quickly overviewed the efforts in Indonesia, Japan, Malaysia, Philippines, Singapore, Thailand and Vietnam. The working group tried to extract lessons from past and ongoing efforts.

Summary of Papers in the Report

Chapter 1 provides an overview of the development of the policy concepts for eco-efficient industrial activities, such as 3Rs, zero emission, eco-industrial park and others. It is pointed out that the 3Rs is an environmental policy concept/slogan for waste reduction, reuse and recycling which exists for quite a long time. The 3R initiative of G8 has drawn attention of international community since 2004.

Chapters 2, 3 and 4 provide an overview of the situation of recycling in Indonesia, Malaysia, and Singapore respectively. Chapter 2 explains the legal framework of waste management and shows flows of waste plastics, used paper and e-waste for recycling in

Indonesia. Chapter 3, overviews the legislation and practices in managing hazardous waste and solid waste, focusing industrial waste in Malaysia. In Chapter 4, the waste profile and 3R efforts in Singapore are highlighted. It concludes that the critical success factors that contributed to the improvement of waste management include the partnership of public sectors, private sectors and the people, an integrated approach for dealing with waste management and long term planning and targets for policies. Chapter 5 explains the industrial policies for promoting development of recycling industries in Japan since 1970s. The efforts of the ministry in charge of industry complement to the efforts of ministry in charge of the environment, by stimulating the demand of recyclable waste.

Chapters 6 and 7 review waste reduction efforts under cleaner production programs in Thailand and Vietnam respectively, in which experts make suggestion to companies on measures to reduce cost of production and environmental burden. Cleaner production creates economic benefit to industries and environmental benefit to the society. One of the limitations of cleaner production is the fact that basic scope is limited to the production process in a factory. In order to reduce waste further in economical way, it may be better to work with other recycling factories. Waste information exchange program creates such opportunities.

Chapters 8, 9 and 10 provide an overview about the industrial waste information exchange programs and related activities in Philippines, Thailand and Japan. Industrial Waste Information Exchange Program is an effort to make matching of industrial waste generator and users by collecting the data of waste generation and demand of waste. Chapter 11 compares the industrial waste information exchange programs in the three countries. It is found that waste information exchange program is successful in the initial years after its launch. However, during its implementation it was also noticed that there were certain types of wastes that could not attract any buyers or could not be recycled easily. Technical supports from experts are needed to develop appropriate technology to utilize these wastes and to advise companies on the commercial potential of these wastes. Such consulting services should be provided for further utilization of waste.

“Mapping document on 3R-related Regulation, Ministries and Programs” in the Appendix summarizes the legislation, ministries, and programs on 3R in the region.

Policy Recommendation

Based on these papers, the working group made the following policy

recommendations.

- The success of 3Rs policy is not only a task of one or two departmental sectors, such as Ministry of Environment, Ministry of Public Works or Construction. Others departmental sectors should also be integrated into the 3R policy, such as the Ministry of Industry, Ministry of Trade, Ministry of Small and Medium Enterprises, among others. This would be the initial step for introducing this new paradigm in 3Rs approach. For example, Ministry of Industry should formulate and/or implement policies such as developing recycling industrial park, giving tax incentive for investment in recycling industry.
- Some examples of 3R policies in the region include the following:
 - Industrial Waste Information Exchange Program
 - Japan, Philippines and Thailand implement industrial waste information exchange program which links waste generator and waste users. Third party collects the data of waste generation and demand of waste, and arranges matching of generator and users.
 - Disclosure of information on recycler
 - List of credited recyclers should be disclosed, because it becomes easier for waste generators to contact recyclers.
 - Providing guidelines for specific industries on recycling
 - Small and medium scale industries have limited information on how to reduce, reuse and recycle waste. Providing guidelines for these industries can promote 3Rs and give economic benefit to them. One of the models is Code of Practices provided in cleaner production program in Thailand.
 - Promoting technological development in recycling
 - Some research projects on recycling technologies have been implemented in various countries. Such research should be supported.
 - Providing information to small scale recycling industries
 - To upgrade small scale recycling industries in terms of prevention of pollution and quality control of products, some supporting program should be considered.
 - We believe, it is useful for Asian countries to share experiences in the region. We are facing similar problems and region-wide problems.
 - For a first attempt to compare similar programs, Industrial Waste Information Exchange Programs in Japan, Philippines and Thailand are reviewed. It is observed that the more companies are involved, the more waste are recycled through the programs. After several years of implementation, some difficult wastes, which are not easily recycled, are remained un-recycled. It is better to have experts group to find the technologies for recycling difficult wastes. To

find the way to deal with difficult waste, the consultation services from experts should be provided. This kind of program can be integrated into activities of cleaner production.

Some other policies such as putting responsibilities on various stakeholders, voluntary collection program, and industrial standard for recycled goods and developing recycling industrial park should be compared and reviewed.