

Chair's Summary

Second Meeting of the Regional 3R Forum in Asia

“3Rs for Green Economy and Sound Material-Cycle Society”

4-6 October 2010, Kuala Lumpur, Malaysia

I. Introduction

1. The United Nations Centre for Regional Development (UNCRD), Ministry of Housing and Local Government of Malaysia (MHLG-Malaysia), and Ministry of the Environment of the Government of Japan (MoE-Japan), jointly organized the Second Meeting of the Regional 3R Forum in Asia from 4 to 6 October 2010 in Kuala Lumpur, Malaysia. The Forum was supported by the German Technical Cooperation (GTZ), Institute for Global Environmental Strategies (IGES), and Economic Research Institute for ASEAN and East Asia (ERIA). It was attended by approximately 150 participants, comprising government representatives from twenty-two Asian countries, including ten member countries of the Association of Southeast Asian Nations (ASEAN), Bangladesh, People's Republic of China (hereinafter, China), India, Japan, Republic of Korea (hereinafter, Korea), Mongolia, Timor-Leste, and five Pacific island countries (Fiji, Kiribati, Palau, Samoa, Solomon Islands), Subsidiary Expert Group Members of the Regional 3R Forum in Asia, international resource persons, representatives from various UN and international organizations, NGOs, and local observers from Malaysia. As a side event of the Forum, the NGO communities from Japan and Malaysia shared and discussed various experiences in 3R areas, including on how to further strengthen their role in 3R promotion.
2. The Asian-Pacific region is facing severe challenges in coping with the rapidly increasing volume and changing characteristics of urban and industrial wastes. The quantum of waste is increasing significantly due to rising population, and increasing consumption and per capita waste generation. Apart from municipal solid waste (MSW), emerging waste streams such as electronic waste (E-waste), health-care waste, plastic waste, construction and demolition (C&D) waste, and household hazardous waste have become matters of concern. These wastes, if not managed properly, will have a significant adverse impact on human health, ecosystems, and resources, which will threaten the sustainability of the region and its economies. Alternate models of growth that decouples economic growth from excessive use of resources and minimizes generation and disposal of wastes should be the strategy adopted. Promotion of Reduce, Reuse, and Recycle (3Rs) should form the key element of such a strategic approach. Only then will the region be able to shift towards a green economy – a goal that is gaining high international recognition towards achieving sustainable development.
3. The Regional 3R Forum in Asia was established in November 2009, with the objective of becoming a knowledge networking platform for disseminating and sharing best practices, technologies, and tools on various aspects of the 3Rs. This platform was also expected to facilitate a high-level policy dialogue to address the linkages of 3R with concepts such as Integrated Solid Waste Management (ISWM), Sustainable Consumption and Production (SCP), and Sound Material-Cycle (SMC) on a regular basis. At the Inaugural Meeting held on 11-12 November 2009, the *Tokyo 3R Statement* was

endorsed by the participants, which provided the overall direction and priorities for Asian countries in the promotion of 3Rs.

4. Building on the Inaugural Meeting, the Second Meeting of the Regional 3R Forum was organized with the following objectives: (a) contribute towards improved understanding and strengthened regional consensus in terms of policy options that promote the 3Rs towards achieving green economy, resource efficiency, and a sound material-cycle society; (b) collate and share information on opportunities for collaborative actions, and national level and international partnerships to infuse investment flows, encourage public-private partnerships, and expand the canvas of waste management services; (c) showcase innovative initiatives, achievements, and good practices in 3R programmes and strategies; and (d) respond to the major findings of CSD-18 in the waste management sector and provide key inputs to CSD-19 and UNCSD/Rio+20 on policies and specific actions drawing on the recommendations of the Forum.

II. Opening Session

5. Mr. Takeshi Hidaka, Parliamentary Secretary of the Environment, Japan, welcomed the participants on behalf of his Ministry. In referring to the current situation of the global economy, resource use, and waste generation, he emphasized that efficient use of resources and reduction of waste generation are essential for sustainable development in the Asian region. Mainstreaming the 3Rs has the immense potential of contributing towards this end. Japan's efforts towards making a transition in order to achieve a SMC society by promoting the 3Rs were shared, in particular the results of enforcing the Fundamental Law for Establishing a SMC Society established in 2000, and the emergence of "venous industries" that engage in the 3Rs and environmentally sound management of wastes. He expressed his hope that this Forum would become a meaningful platform for cooperation among all parties and stakeholders concerned, including governments, international organizations, aid agencies, civil society, and experts to promote the 3Rs in Asia.
6. Delivering his opening remarks, Mr. Kazunobu Onogawa, Director of UNCRD, emphasized the urgent need to reduce the amount of waste that is generated, and to improve waste management practices in order to overcome these challenges. He further cautioned that the world would eventually face serious environmental consequences unless concerted action is taken at the upstream by focusing on reduction of resource input as well as waste output in the production process. The 3Rs provide a unique orientation for guiding society to change its production and consumption patterns, and helping to address the waste issue from a resources perspective. UNCRD, as the lead agency of the Regional 3R Forum that was inaugurated in November 2009, views this forum as being a valuable regional mechanism that facilitates intergovernmental and interagency coordination, and an interface between Governments, expert group, international organizations, and other partners.
7. Referring to the Commission on Sustainable Development (CSD), Ms Kenza Kaouakib-Robinson, Senior Sustainable Development Officer, United Nations Department of Economic and Social Affairs (UN-DESA), informed that CSD 19 is focusing on addressing the challenges and obstacles impeding the implementation of an internationally agreed agenda in five thematic areas that include waste management and sustainable consumption and production patterns, both of which are closely linked with the 3Rs. She emphasized that the 3R approach, which calls for a broader, more holistic way of viewing waste management, is unique in that it integrates waste management with the key paradigms of sustainable production and consumption, greening the economies, and improving resource efficiency, which together could make a significant contribution towards sustainable

development. She emphasized the importance of addressing the particular challenges of Small Island Developing States (SIDS). She expressed her hope that outcomes of this Forum will provide meaningful input to CSD 19 and Rio+20.

8. Hon. Minister H.E. YB. Dato' Wira Chor Chee Heung shared that Malaysia attaches strong importance to the objectives of the 3Rs. The 3Rs are considered highly instrumental and fundamental to addressing the issues and problems arising from the ever-increasing amount of resource consumption and waste generation. With the mainstreaming of the 3Rs, the nation will not only address the problems associated with waste alone but also contribute to the effective utilization of finite natural resources. Towards this end, the Ministry of Housing and Local Government, Malaysia, has promulgated the Solid Waste and Public Cleansing Management Act 2007, which has a specific provision on 3Rs to enhance the country's effort in managing waste effectively and efficiently. He also noted that the theme of the Second Regional 3R Forum in Asia is closely linked to the internationally important processes of CSD 18 and CSD 19, which have waste management as one of the themes. He stated that the United Nations Conference on Sustainable Development (UNCSD) or the Rio+20 which is scheduled in 2012, will also provide an opportunity as this conference is expected to focus on "Green Economy in the Context of Sustainable Development and Poverty Eradication" as one of its possible themes.
9. In his keynote address, Dato Ahmed Hj Kabit, Secretary General, Ministry of Housing and Local Government, emphasized the importance of solid waste management (SWM) in the context of Malaysia and introduced the recently formulated National Strategic Plan. This Plan has targeted actions for improvement of waste management infrastructure and related services in a timely and cost-effective manner. Traditionally, SWM has been the task of local authorities and due to lack of resources and lack of access to latest technologies, coverage and quality of waste management services have been matters of concern affecting the quality of the local environment. To respond to this challenge, under the National Strategic Plan, the federal government has introduced two strategies: Federalizing solid waste management (Act 672), and privatizing transportation and collection, thus reducing the financial burden of the Government. These two strategies are expected to lead to major improvements in Malaysia's SWM over a long run.
10. Delivering the second keynote address on "Transition to a Green Economy: Conditions for a Sustainable Socio-Industrial Metabolism," Prof. Friedrich Schmidt-Bleek, President, Factor 10 Institute, emphasized the importance of resource productivity in responding to the rising challenge of managing wastes. According to Prof. Schmidt-Bleek, the root causes of unsustainability are: (a) enormous extraction, movement, and conversion of natural resources (material, water, and land use) and (b) increasing intensities of unwarranted consumption. Despite all the efforts over the years, traditional economic, financial, and environmental policies have not been able to halt the further decline of life-sustaining services of the ecosphere. The key is therefore how to get maximum output from our finite resources, how to price these resources on a realistic basis to deter their wasteful use, and how to value the support function of the earth's ecosystems. There is need to act on a proactive basis, and we can no longer follow a "symptom-oriented" approach towards environmental protection. Emphasis was placed on the need to devise better indicators of growth than GDP that address resource productivity and enable us to move towards a green economy.

III. Transitioning to a Green Economy -- Role of the 3Rs

11. The meeting noted that the world population is expected to increase 1.4 times within 45 years, from

6.5 billion in 2005 to 9.1 billion in 2050. At the same time, more than three quarters of the world's population live in countries where national resource consumption has exceeded the nation's resource capital. The amount of global in-use metal stocks required would be 3-9 times of those existing at present. With regards to environmental degradation, 13 million hectares of the world's forests is lost due to deforestation every year. By 2025, as much as two-thirds of the world's population may be subject to moderate to high water stress.

12. To compound the resource crunch, wastes arising from the use of resources are leading to resource degradation, subsequently leading to adverse impacts on human health and ecosystems. The more economic growth there is, the more resources are consumed and waste generated. A strategic approach is therefore needed that addresses resource consumption and waste generation in a lifecycle perspective, and stresses the preventive principles upfront such as integrated solid waste management (ISWM).
13. ISWM supported by tools such as 3Rs may lead to decoupling environmental degradation from resource use. Here efforts taken by countries such as Japan, China, and Korea in the region have been encouraging. Policies and strategies such as Sound Material-Cycle Society (Japan), Circular Economy (China), and Green Growth (Korea) could serve as models for the region to follow. While policies and strategies at the national level are important, both top-down and bottom-up approaches are needed. We need to change our lifestyles and reorient to the culture and traditions of Asia that respect, protect, and conserve our resources.
14. In support of ISWM, countries could consider a number of economic instruments such as product tax, landfill tax, waste disposal tax, user fees, deposit refund systems, and Pay As You Throw (volume-based pricing). Experience on ecological tax reform (ETR) in Germany is also useful to note in this regard. These economic instruments should be complemented by promoting extended producer responsibility (EPR), product stewardship, and tagging products for their footprint or rucksack such as eco-labelling. These interventions could lead to improved and cost-effective compliance, increased competitiveness, creation of green jobs, and new market opportunities. Additional benefits include risk avoidance and reduced liability, and better working environment, especially of the waste-pickers engaged in the informal sector. Policies favouring a shift from a "corporate" to "welfare" culture of economic development could be of further benefit.
15. In order to strengthen the information and knowledge base on waste quantities and composition, and their linkages with economic growth (such as GDP), countries should actively consider inventoring waste generation. For this purpose, it may be prudent to set up a commonly agreed, understood, and measurable set of key performance indicators (KPIs). The KPIs could capture resource productivity, cyclic use of resources, and quantum of waste disposed. The KPIs set in the Twelfth Five-Year Plan of China could be considered an example. The KPIs could assist each national government to track progress, especially decoupling between economic growth and environmental degradation and allow inter-country benchmarking.
16. To mainstream 3Rs in the national economy, countries should create an enabling environment of sound policies, appropriate technologies, and effective institutional and financial frameworks towards: promoting waste reduction and segregation; improving efficiency of collection and transport of waste; setting up community recycling facilities; ensuring participation of the informal sector; shifting from open dumping to secured sanitary land filling; monetizing carbon credits from recycling and processing of waste; and encouraging eco-innovations across supply chains.

17. Recognizing the imbalance between production and consumption patterns, the United Nations Environment Programme (UNEP) came up with three key initiatives: (a) establishing a resource panel to provide a scientific basis for resource use and consumption; (b) Marrakech process to implement SCP programmes; and (c) green economy as the goal. These efforts are expected to assist countries in the region towards transitioning to a green economy. A green economy has a wide range of benefits for developing countries such as preservation of their stock of natural resources, reduced dependency on fossil fuels, creation of less waste, alleviation of poverty, and reduction in social disparities.
18. The Organisation for Economic Co-operation and Development (OECD) has come up with an agenda that sustainable materials management (SMM) is the approach for promoting sustainable materials use, integrating actions targeted at reducing negative environmental impacts, and preserving natural capital throughout the life-cycle of materials by taking into account economic efficiency and social equity. SMM is closely linked with the 3Rs, resource efficiency, and green economy concepts. To achieve the goals of SMM (and 3R), **policy integration** is required across sectors (and cutting across various ministries). International cooperation is also essential to ensure the effectiveness of SMM policies.

IV. Partnerships for Realizing a Low Carbon and Resource-Efficient Society

19. 3R technologies are essentially resource-efficient technologies. Technology transfer typically moves in steps but for the early adoption of 3Rs, leap-frogging is necessary. To avoid the risks of accelerated technology transfer (especially between North-South) however, it is important that both technical and managerial aspects (including economic and institutional) are addressed. Development needs must first be identified and technology solutions be tailored accordingly; diversity between and within countries must be recognized; and technology needs to be both appropriate and financially sustainable under local conditions. Technology transfer in 3Rs has a strong social dimension and potential to affect the livelihood of the informal sector. South-to-South cooperation has strengths in these aspects and should be promoted. Consideration of local conditions (waste characteristics, in particular) and compatibility with local culture (social acceptability) are very critical factors for successful technology transfer. South-South experience sharing on successful business models of integrating the informal sector with the formal sector will assist in the promotion of 3Rs.
20. To ensure sound technology transfer in the waste arena, additional measures could include: (a) assistance to countries in the region to develop enabling policies, a regulatory and institutional setup for the promotion of PPP (e.g., BOOT investments) in advanced technology areas; (b) capacity-building of local implementing institutions for technology assessment and operation; and (c) identification of mechanisms to protect intellectual property rights (IPR) of the technology providers.
21. The waste sector has the potential of taking advantage of CDM. Currently, there are more projects in landfill gas (LFG) recovery than composting. Focus on LFG recovery is not very beneficial as it assumes that all waste are at landfills (which is often not the case) and there is a negative impact on the informal sector that gets deprived of recycling materials. More recently, a methodology has been approved (in March 2010) to take advantage of CDM for waste recycling. This methodology (SSC III A J) was evolved to promote the recovery and recycle of high density polyethylene (HDPE) and low density polyethylene (LDPE) materials. Inclusion of this methodology will certainly boost promotion of 3Rs, especially benefiting the cooperatives of waste pickers. Development of methodologies for other recycling material such as paper and metals may further boost the 3R

business.

22. There is a need to address the material or resource flows for sustainable management of waste. A life-cycle perspective is required which is not just limited to “downstream” or management of wastes, but also includes “upstream” at the “engine” driving waste generation; namely, resource extraction, production, packaging, and distribution. A paradigm shift is necessary to make the transition from the current system to a more sustainable one. The Ministries of Environment alone cannot be vested with the responsibility of bringing about this shift or change. Other key line ministries must be brought on board as sustainable resource consumption is an agenda for all ministries. National-level policy integration is needed via inter-agency collaboration. This is a difficult task, but necessary. Fine examples to note are the joint efforts on ETR by MOE and MOF in Germany, and the SMCS strategy developed by MOE with METI in Japan.
23. Improvement of SWM can help mitigate greenhouse gas (GHG) emissions with relatively low cost. Various approaches for mitigation of GHG are possible. These include GHG emission reductions through waste segregation and recycling, optimizing collection and transport (by streamlining fleet logistics), and practicing appropriate treatment technologies (e.g., biogas recovery, composting, and making charcoal from biodegradable waste). Institutional strengthening and capacity development is, however, necessary for transitioning to a low carbon and resource-efficient society and taking advantage of CDM. Capacity development requirements for mainstreaming the 3Rs include: capability for participatory engagement and empowerment; data analysis; planning and prioritization; political action and communication; monitoring, evaluation, and learning; and building specific scientific/technical capabilities. Developing countries may require comprehensive and continuous support to build necessary capacities at all levels -- both professional and organizational -- to ensure practicing of the 3Rs.
24. The concept of 3R is linked to various global issues such as climate change, phase-out of harmful substances such as ODS and POPs, etc. ODS phase-out is linked to climate change as there are major benefits to GHG reduction from ODS recovery recycling and reclamation. UNDP is working in Brazil focusing on CFC-based refrigerators by promoting an early fridge retirement programme (through involvement of the private sector), imparting technical know-how, and providing training for safe recycling of CFCs. A networked approach is used using international and local partners in the form of a chain, which ends with the total elimination of CFCs. This experience may be replicated in countries of the Asian region.

V. Options for Small- and Medium-sized Enterprises (SMEs) and the Informal Sector

25. The problem of industrial waste management today is both a challenge and an opportunity. Micro, small- and medium-sized enterprises (MSME) do not have the necessary manpower and resources to optimize their production processes; i.e., consume less resources, increase conversion efficiencies, and practice 3Rs. Simple changes in operational procedures could improve efficiency and save a considerable amount of money (without introducing expensive new technology). Opportunities exist to improve energy efficiency (of lighting, fans, motors) and material-use efficiency (through housekeeping, upgrading, and improvement of operations).
26. Several strategies could help empower SMEs in minimizing environmental costs through enhanced resource productivity. Such strategies could include: adoption of environmental management systems, resource sharing and application of shared facilities through industrial clustering and

networks, developing research, development and demonstration programmes for adoption of cleaner technologies, and promoting energy recovery and waste recycling and exchange centres. Other strategies such as mobilizing the necessary resources by improving SMEs' access to finance for inter-city cooperation and promoting access to information through partnerships and networking, and disseminating the concept of economic benefits created by environmental performance, and greening the supply chain, with the prospect of social responsibility, could be beneficial as well.

27. One of the effective ways of successfully integrating resource efficiency and the 3Rs in MSMEs operations could be the promotion of eco-towns and eco-industrial parks. India supported and established waste minimization circles (WMC) for the promotion of 3Rs in MSME clusters that led to significant savings in resources, reduced wastes and GHG emissions, and increased profitability. Similarly, schemes for financing common effluent treatment plans and common hazardous waste treatment and disposal facilities were introduced in industrial estates that included provision of recovery and recycling units. This experience may be targeted to setting up resource recovery facilities. Countries in the region should consider establishing comprehensive and integrated resource recycling facilities on the principles of 3R. These facilities may operate in collaboration with each other while receiving the support of the private sector for deployment of cutting-edge 3R technologies and infusing investments to establish an inter-Asian recycling network.
28. UNEP/United Nations Industrial Development Organization (UNIDO) launched a programme on Resource Efficient and Cleaner Production (RECP). To operate the RECP programme, UNEP/UNIDO has set up forty-eight cleaner production centres in developing countries with a mandate of disseminating information; raising awareness; conducting training; providing technical assistance with case studies; demonstrating environmental and economic gains; advocating policy, technology development, and transfer; and promoting investment and business cooperation. To foster networking, UNEP/UNIDO is also conducting regional and national roundtables with the idea of promoting resource-efficient and low-carbon industries, as it would contribute to decoupling economic growth from the consumption of natural resources. Also, it would benefit the industries directly by increasing efficiency and productivity, and improving the competitiveness of companies and creating new market opportunities for companies and new jobs.
29. Today, most of the electronic waste (e-waste) is processed by SMEs in developing countries. Globally, approximately 40 million tons of e-waste is processed every year. Elimination of toxicity at source and resource recovery, especially of metals, must be focused on in the processing of e-waste. There is also a need to improve material efficiency across the e-waste recycling chain. While collection efficiency is adequate in developing countries, including sorting and dismantling, processing techniques have low efficiency and the processes adopted are unsafe or hazardous to the workers. Here it is necessary to provide technical and financial assistance so that improvements can be made.
30. The waste recycling market is growing. MSMEs in the informal sector play a crucial role in the business of 3Rs in developing countries. The recycling and recovery rates, however, depend much on the technical and investment-related capacities of these MSMEs. Often the lack of equipment/technology (capital) and market access limits the extent of recycling and recovery rates. It is important that more quantitative information is obtained on material flows, material conversions, and value gains for introducing supportive and catalytic measures. These interventions could include providing technical assistance, micro-finance, and pilot new business models, and linking the formal and informal sectors engaged in waste-related businesses. This will also help to control price

volatility that is very high, up to 5 times greater than for virgin materials, and thus reduce business risks. Further, it is also necessary that appropriate quality and health and safety standards are set for recycled products or products made out of waste. These support measures could also help MSMEs in opening global markets.

31. Local and regional banks could play an important role in promoting green businesses. In this regard, national and local governments should promote partnerships with local and regional banks for investing in innovative projects that will foster effective collaboration among the public and private sectors. Banks may be encouraged to create an energy efficiency fund to provide medium- and long-term financing to energy service companies (ESCOs) and assist MSMEs in undertaking and implementing environmental management system (EMS).
32. Other measures to support recycling market development focusing on MSMEs include: general market regulation measures for waste collection and processing to avoid monopolistic control over the market; disseminate price and market information (prices, market counterparts) on lists/websites; create incentives for local consumption and valorization; public procurement programmes; product standards that require a minimum level of recycled content; facilitate development of local value chains that are complementary to international raw material markets; and train SMEs on technological aspects and product quality to secure competitiveness of products.

VI. Implementing 3R Programmes and Strategies at the Local, National, and Regional Levels

33. In his keynote address, Mr. Joseph Hui Kim Sung informed about Singapore's National Strategy for Sustainable Development, which has the overall vision of "Making Singapore a liveable & lively city state, one that Singaporeans love and are proud to call home". The Strategy has four key thrusts, i.e., resource efficiency, liveable environment, capacity-building, and sustainable community. The strategy has set clear quantitative targets related to these key thrust areas such as a recycling target of 65 per cent by 2020 and 70 per cent recycling by 2030. Singapore plans to establish a knowledge hub and to be a provider of sustainable development solutions. Singapore will be interested in hosting the third Regional 3R Forum in Asia in Singapore in 2011.
34. It is important to note that 3Rs make a notable contribution towards achieving the MDGs. Given the significance of the 3Rs as an effective mechanism/tool in this regard, countries are encouraged to develop national 3R strategies if existing national development strategies have not appropriately integrated/mainstreamed the 3Rs.
35. In order to ensure a sustainable future for cities or at the local level, national governments must be clear in their strategy with regards to greening of their economies: whether to continue with a business-as-usual attitude with a 'more waste and more recycling' approach, or whether the goal should be to encourage the producer to alter the design of products, utilize the expertise of the manufacturers in managing used products after they reach end-of-life, and develop modalities for the gradual shifting of cost of managing the used products from the local government or municipalities to the manufacturers. Towards this end, a strategic link among the government, private sector, and research institutions must be established and/or strengthened towards the successful mainstreaming and realization of 3Rs objectives.
36. "Going green" can be profitable through the expanding market of environmental goods and services.

Significant opportunities exist for the private sector in the aspects of equipment and technology, services, and resources. Private sector companies are also encouraged to improve their eco-efficiency. Eco-efficiency refers to the delivery of competitively priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity throughout the life cycle, to a level at least in line with Earth's estimated carrying capacity. Seven elements or steps companies can make to improve eco-efficiency may include: (a) reduce material intensity; (b) reduce energy intensity; (c) reduce dispersion of toxic substances; (d) enhance the ability to recycle; (e) maximize use of renewable resources; (f) extend product durability; and (g) increase service intensity. The private sector is encouraged to pursue "green" corporate initiatives, which aim to reduce the negative impact by a company on the environment.

37. The 3Rs have been well integrated into Malaysia's Solid Waste and Public Cleansing Management Act of 2007. Under this Act, Malaysia's mitigation strategies address three stages of solid waste management, *viz.*: (a) reduction of organic waste generation so that the organic wastes that need to be treated or disposed are minimized; (b) proper treatment/recycling of organic waste to minimize the total organic wastes that need to be disposed of; and (c) safe and secure landfill management to ensure that GHG emissions from the site are properly captured. Armed with these strategies, Malaysia has set a national recycling rate target of 22 per cent by 2020.
38. Examples shared from Bangladesh included a public-private-community partnership model of composting suitable in the local context that could have a significant positive impact on the local environment, climate change mitigation, as well as the lives of the local poor. The CDM is brought into this model as an important component (partner) that expands the scale of the project by bringing in additional revenues. The working environment of the informal sector could be significantly improved by spending a portion of this added revenue for the welfare of the workers. The key is to connect all the stakeholders to work together in such a way that their respective responsibilities are clear and the benefits are shared. Having received support from a number of international organizations and partners, the model is being replicated both within Bangladesh and in other countries in Asia – a successful model of a South-to-South knowledge networking and sharing of experience.
39. In countries such as India, community operations are very important as government services often cannot provide all the waste management services. According to the Development Alternatives, an NGO based in India, the four strategic activities for making community operations successful include assessment (waste audits), awareness raising, tangible action by the communities, and advocate for larger institutions to do what communities cannot do. By introducing proper, locally adopted technology, and by setting up appropriate partnership mechanisms, various types of waste, including paper waste and poultry waste, could be managed by communities to produce recycled materials and harness energy.
40. Many of the problems faced by Pacific island countries are quite similar to that of Asia, although the scale may differ. Due to their unique geographic characteristics, the impact of poor waste management on the coastal environment and biodiversity are significant. Economic costs are also estimated to be high which include potential costs of healthcare, vector control, damage on marine and wetland resources, and loss in tourism revenue. While SIDS make a very small contribution to GHG emissions, these countries have been highly impacted by global warming, such as increasingly frequent and intense weather events and threats due sea-level rise. A wide range of efforts is being undertaken at the regional, sub-regional, and national levels, with the support of donor and

international organizations, including waste segregation, composting, ban on plastic bags, and formalizing the informal sector. Several countries have taken the lead by introducing ecological financing such as a green fee in Palau and an environment protection fund in the Cook Islands. At the same time, traditional waste management practices such as feeding organic waste to animals are still being practiced in the SIDSs, mostly in rural areas.

41. SIDS face challenges on how to report and share successful measures, and how to scale up successful policy measures. Implementation of 3R and ISWM require technical capacity-building/technical transfer as well as financial resources. To overcome these challenges, SPREP called for continued and strengthened partnership with donors and international organizations to maximize available resources, efforts to increase country capacity to access and use resources, dissemination of lessons learned from pilot projects (e.g., Fiji), building and strengthening beneficial 3R partnerships, and establishing South-South cooperation for information sharing and peer-learning. SIDS may, in addition, consider introducing policies such as banning of plastics, fees and EPR imposition on the importers of goods, visitor fees, and setting up of regional recovery facilities (especially for metal scraps). Given the current situation that waste disposal in the Pacific SIDS still includes unsanitary and unhealthy dump sites, there is also a need to upgrade facilities into sanitary landfills through technical cooperation and donor aid. Facilities should include cost-effective semi-aerobic landfills such as the one adopted by Samoa, and waste to energy incineration where economically feasible and desirable.
42. The Asian Development Bank (ADB) introduced in its Strategy 2020 operational emphasis on mainstreaming environment in development. ADB has been supporting municipal waste management in urban infrastructure projects, including waste to energy, secured landfills (with LFG recovery), and composting. ADB has earmarked funds to undertake: model project development in medium- and small-sized towns catering to MSW; targeted studies to address policy, technology, and knowledge barriers in promotion of 3R; and development of large-scale waste management projects to facilitate private sector participation. ADB has also encouraged the countries to integrate the 3R and waste management into their urban development strategies, so that the needed investments can be brought into expanding and improving the infrastructure for waste management.
43. Bilateral cooperation is equally important. Japan has undertaken the promotion of 3R in Asia by assisting national governments in the region in formulating national 3R strategies and by supporting the Regional 3R Forum. The Forum is expected to foster collaborations and partnerships and assist in enhancing knowledge about 3Rs, especially its economic and environmental benefits.
44. The participants expressed their sincere appreciation to the Ministry of Housing and Local Government of Malaysia (MHLG-Malaysia), for successfully hosting the Second Regional 3R Forum. The participants further requested the Ministry to officially submit the outcome of the Forum to the 19th Session of the Commission on Sustainable Development in 2011 for its consideration.
45. At the same time, the participants welcomed the decision of NEA-Singapore to host the Third Regional 3R Forum in Singapore in 2011.