

# Ha Noi 3R Declaration<sup>[1]</sup>

## - Sustainable 3R Goals for Asia and the Pacific for 2013-2023 -

### Preamble

We, the representatives of Asia-Pacific countries (Australia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, People's Republic of China (hereinafter, China)<sup>2</sup>, Fiji, India, Indonesia, Japan, Kiribati, Republic of Korea, Lao PDR, Malaysia, Maldives, Marshall Islands, Federated States of Micronesia, Mongolia, Myanmar, Palau, Papua New Guinea, the Philippines, Samoa, Singapore, Solomon Islands, Thailand, Timor-Leste, Tonga, Tuvalu, and Viet Nam), international organizations, bilateral and multilateral agencies, research organizations, and professionals in the field of waste management, who have met at the Fourth Regional 3R Forum in Asia, held in Ha Noi, Viet Nam, from 18 to 20 March 2013, to demonstrate our renewed commitment to realizing a promising decade (2013-2023) of sustainable actions and measures for achieving resource efficient society and a green economy in the Asia-Pacific region through the implementation of the 3Rs (reduce, reuse, and recycle),

**Reaffirming**, as noted in the *Johannesburg Plan of Implementation*, the need for consolidated efforts to prevent and minimize waste and to maximize reuse, recycling, and use of environmentally-friendly alternative materials, with the participation of government authorities and all stakeholders, in order to minimize adverse effects on the environment and improve resource efficiency,

**Noting** the key global issues in the waste sector highlighted at the 18th and 19th sessions of the Commission on Sustainable Development held in 2010 and 2011, such as: the need to move towards a zero waste society; the requirement for special attention on particular types of waste, in particular the emerging new waste streams such as electronic waste, plastics in the marine environment, and oil and lubricants; the critical role of partnerships and international cooperation; and the significance of education and public awareness that lead to behavioural change,

**Reaffirming and building upon** the *Tokyo 3R Statement* announced by the participants at the Inaugural Meeting of the Regional 3R Forum in Asia, held in Tokyo, Japan, on 11 and 12 November 2009, which endorsed the establishment of the Forum and set the regional priorities in the area of the 3Rs, and subsequently on the outcome of the Second Regional 3R Forum held in Kuala Lumpur, Malaysia from 4 to 6 October 2010, which addressed the 3Rs for Green Economy and Sound Material-Cycle Society,

**Building on** the *Recommendations of the Singapore Forum on the 3Rs in Achieving a Resource Efficient Society in Asia*, annexed to the Chair's Summary of the Third Regional 3R Forum held in Singapore from 5 to 7 October 2011 and submitted by the Government of Singapore to the Rio+20 process as an official input, which listed a comprehensive set of recommendations covering a wide range of sectors based on the fundamental understanding that the 3Rs are intrinsically linked with resource efficiency in a wide range of sectors such as agriculture, industry, and energy, among

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<sup>1</sup> The *Ha Noi 3R Declaration* is a legally non-binding and voluntary document.

<sup>2</sup> China will confirm the government clearance and report back to the Secretariat in due course.

others, towards transitioning to a resource-efficient and green economy,

**Underscoring** the critical importance of improving water use, central to all the other dimensions of sustainable development, and the fact that a third of the world's population is affected by water scarcity, which is further compounded by widespread discharge of wastes and untreated industrial effluents into rivers, water bodies, and valuable wetlands in many parts of the world, and thereby **noting** the important nexus between protection of freshwater resources and integrated waste management,

**Noting** the growing urbanization along with the diversification of waste streams worldwide as well as the growing presence of chemicals and hazardous and toxic elements in the general waste stream, which require a more extensive collaboration and partnerships among the different stakeholders – governments, civil society, private sector, local communities, international organizations, and the UN system, to deal with such complex and daunting nature of waste management challenges faced by local authorities and municipalities, and thereby further **noting** the objectives of IPLA<sup>3</sup>,

**Reaffirming** the importance of technical cooperation among developing countries (TCDC) as recognized in the *Buenos Aires Plan of Action* and as endorsed by the United Nations General Assembly (UNGA) in 1978<sup>4</sup>, that calls for strengthening overall cooperation among developing countries as well as increasing their collective and individual capacity for absorption and adaptation of technology and skills to meet their specific developmental needs,

**Welcoming** the United Nations Environment Programme (UNEP)/Governing Council decision 27/12 to continue facilitating ongoing international cooperation and coordination focusing on waste prevention, minimization, and management, including the progress in establishing the Global Partnership on Waste Management hosted by the UNEP/International Environmental Technology Centre,

**Acknowledging** the unique and effective roles the 3Rs can play by offering a complementary and integrated package of measures and tools to harness recyclable resources, energy, and economic benefits from waste,

**Recognizing** that the 3R approach, which is fundamentally an approach that requires efficient use of resources from the point of extraction up to their final disposal, could make a significant contribution in reducing greenhouse gas (GHG) emissions from the entire life-cycle of resources and products,

**Noting** the rapid growth of resource use in the Asia-Pacific region in the last three decades and the huge potential for future growth, and also **noting** the rapid growth of energy use in the region, now accounting for over 35 per cent of the world's energy consumption and expected to grow further under the "business as usual" scenario<sup>5</sup>, thereby **recognizing** the need to increase resource and energy efficiency for sustainable development in Asia and the Pacific,

**Affirming** the recommendation made by the United Nations Secretary-General's High-Level

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<sup>3</sup> International Partnership for Expanding Waste Management Services of Local Authorities (IPLA), a UN-registered partnership launched at CSD-19, New York, on 12 May 2011.

<sup>4</sup> UNGA resolution 33/134

<sup>5</sup> UNEP, 2011. *Resource Efficiency: Economics and Outlook for Asia and the Pacific*. Nairobi, UNEP.

Panel on Global Sustainability, in its report titled “Resilient people, resilient planet: A future worth choosing,” that Governments should adopt whole-of-government approaches to sustainable development issues, under the leadership of the Head of State or Government and involving all relevant ministries for addressing such issues across sectors (Recommendation 42),

**Recognizing** the issues and challenges faced by Small Island Developing States (SIDS) in achieving sustainable development in view of their unique and particular vulnerabilities, including their small size, remoteness, narrow resource and import base, and exposure to global environmental challenges and external economic shocks, including a large range of impacts from climate change and potentially more frequent and intense natural disasters,

**Noting** the importance of adopting a life-cycle approach and of further development and implementation of policies for resource efficiency and environmentally-sound waste management as contained in the Outcomes Document of the *Rio+20—the UNCSD-“The Future We Want”*, and wherein, the Heads of States and Governments adopted the 10-year framework of programmes on sustainable consumption and production and committed to further reduce, reuse, and recycle waste (3Rs) and to increase energy recovery from waste, with a view to managing the majority of global waste, including e-waste and plastics that pose particular challenges, in an environmentally-sound manner and, where possible, as a resource,

**Noting** further the call of the Heads of States and Governments at Rio+20 for the development and enforcement of comprehensive national and local waste management policies, strategies, laws and regulations, and new and innovative public-private partnerships among industry, governments, academia, and other non-governmental stakeholders aiming to enhance capacity and technology for environmentally-sound chemicals and waste management, including waste prevention,

Express our resolve to voluntarily develop, introduce, and implement policy options, programmes, and projects towards realizing the following sustainable 3R goals in the region, with an ultimate goal of achieving a resource-efficient and resilient society and transitioning to green economy:

## **Sustainable 3R Goals (3RGs) for Asia and the Pacific for 2013-2023**

### **I. 3R Goals in Urban/Industrial Areas**

#### **a) 3Rs in municipal solid waste**

Goal 1: Significant **reduction** in the quantity of **municipal solid waste** generated, by instituting policies, programmes, and projects at national and local levels, encouraging both producers and consumers to reduce the waste through greening production, greening lifestyle, and sustainable consumption.

Goal 2: Full-scale utilization of the **organic component of municipal waste, including food waste**, as a valuable resource, thereby achieving multiple benefits such as the reduction of

waste flows to final disposal sites, reduction of GHG emission, improvement in resource efficiency, energy recovery, and employment creation.

Goal 3: Achieve significant **increase in recycling rate** of recyclables (e.g., plastic, paper, metal, etc.), by introducing policies and measures, and by setting up financial mechanisms and institutional frameworks involving relevant stakeholders (e.g., producers, consumers, recycling industry, users of recycled materials, etc.) and development of modern recycling industry.

Goal 4: Build **sustainable cities /green cities** by encouraging “**zero waste**” through sound policies, strategies, institutional mechanisms, and multi-stakeholder partnerships (giving specific importance to private sector involvement) with a primary goal of **waste minimization**

#### **b) 3Rs in industrial waste**

Goal 5: Encourage the **private sector**, including small- and medium-sized enterprises (**SMEs**) to implement measures to increase **resource efficiency and productivity**, creation of decent work and to improve environmentally-friendly practices through applying environmental standards, clean technologies, and cleaner production.

Goal 6: Promote the **greening of the value chain** by encouraging industries and associated suppliers and vendors in socially responsible and inclusive ways.

Goal 7: Promote **industrial symbiosis** (i.e., recycling of waste from one industry as a resource for another), by providing relevant incentives and support.

Goal 8: Build **local capacity** of both current and future practitioners, to enable the private sector (including SMEs) to obtain the necessary knowledge and technical skills to foster green industry and create decent, productive work.

Goal 9: Develop proper **classification and inventory of hazardous waste** as a prerequisite towards sound management of such waste.

## **II. 3R Goals in Rural Areas**

Goal 10: **Reduce losses in the overall food supply chain** (production, post harvesting and storage, processing and packaging, distribution), leading to reduction of waste while increasing the quantity and improving the quality of products reaching consumers.

Goal 11: Promote full scale **use of agricultural biomass waste and livestock waste** through reuse and/or recycle measures as appropriate, to achieve a number of co-benefits including GHG emission reduction, energy security, sustainable livelihoods in rural areas and poverty reduction, among others.

### III. 3R Goals for New and Emerging Wastes

Goal 12: Strengthen regional, national, and local efforts to address the issue of **waste, in particular plastics** in the marine and coastal environment.

Goal 13: Ensure **environmentally-sound management of e-waste** at all stages, including collection, storage, transportation, recovery, recycling, treatment, and disposal with appropriate consideration for working conditions, including **health and safety aspects** of those involved.

Goal 14: Effective enforcement of established mechanisms for preventing illegal and inappropriate export and import of waste, including transit trade, especially of hazardous waste and e-waste.

Goal 15: Progressive implementation of “**extended producer responsibility (EPR)**” by encouraging producers, importers, and retailers and other relevant stakeholders to fulfill their responsibilities for collecting, recycling, and disposal of new and emerging waste streams, in particular e-waste.

Goal 16: **Promote the 3R concept** in health-care waste management.

### IV. 3R Goals for Cross-cutting Issues

Goal 17: Improve **resource efficiency and resource productivity** by greening jobs nation-wide in all economic and development sectors.

Goal 18: Maximize co-benefits from waste management technologies for local air, water, oceans, and soil pollution and global climate change.

Goal 19: Enhance **national and local knowledge base and research network on the 3Rs and resource efficiency**, through facilitating effective and dynamic linkages among all stakeholders, including governments, municipalities, the private sector, and scientific communities.

Goal 20: Strengthen multi-stakeholder partnerships among governments, civil society, and the

private sector in raising public awareness and advancing the 3Rs, sustainable consumption and production, and resource efficiency, leading to the behavioural change of the citizens and change in production patterns.

Goal 21: **Integrate the 3Rs** in formal education at primary, secondary, and tertiary levels as well as non-formal education such as community learning and development, in accordance with Education for Sustainable Development.

Goal 22: **Integrate the 3R concept** in relevant policies and programmes, of key ministries and agencies such as Ministry of Environment, Ministry of Agriculture, Forestry and Fisheries, Ministry of Industry, Ministry of Trade and Commerce, Ministry of Energy, Ministry of Water Resources, Ministry of Transport, Ministry of Health, Ministry of Construction, Ministry of Finance, Ministry of Labour, Ministry of Land and Urban Development, Ministry of Education, and other relevant ministries towards transitioning to a resource-efficient and zero waste society.

Goal 23: Promote **green and socially responsible procurement** at all levels, thereby creating and expanding 3R industries and markets for environmentally-friendly goods and products.

Goal 24: **Phase out harmful subsidies that favour unsustainable use of resources (raw materials and water) and energy**, and channel the freed funds in support of implementing the 3Rs and efforts to improve resource/energy efficiency.

Goal 25: **Protect public health and ecosystems, including freshwater and marine resources by eliminating illegal** activities of open dumping, including dumping in the oceans, and controlling open burning in both urban and rural areas.

Goal 26: Facilitate the international circulation of re-usable and recyclable resources as well as remanufactured products as mutually agreed by countries and in accordance with international and national laws, especially the *Basel Convention*, which contributes to the reduction of negative environmental impacts and the effective management of resources.

Goal 27: Promote data collection, compilation and sharing, public announcement and application of statistics on wastes and the 3Rs, to understand the state of waste management and resource efficiency.

Goal 28: Promote heat recovery (waste-to-energy), in case wastes are not re-usable or recyclable and proper and sustainable management is secured.

Goal 29: Promote overall regional cooperation and multi-stakeholder partnerships based on

different levels of linkages such as government-to-government, municipality-to-municipality, industry-to-industry, (research) institute-to-institute, and NGO-to-NGO. Encourage technology transfer and technical and financial supports for 3Rs from developed countries to less developed countries.

Goal 30: Pay special attention to issues and challenges faced by developing countries including SIDS in achieving sustainable development.

Goal 31: Promote 3R + “Return” concept which stands for Reduce, Reuse, Recycle and “Return” where recycling is difficult due to the absence of available recycling industries and limited scale of markets in SIDS, especially in the Pacific Region.

Goal 32: Complete elimination of illegal engagement of children in the **informal waste sector** and gradually **improve** the working conditions and livelihood security, including **mandatory provision of health insurance**, for all workers.

Goal 33: Promote 3Rs taking into account gender considerations.

**Annex 1:****Reference Set of 3R Indicators for monitoring the progress made by countries**

This annex outlines a reference list of indicators that the countries may use for monitoring specific progress made on 3Rs and resource efficiency. The *Ha Noi 3R Declaration* is a legally non-binding and voluntary document, and thus countries may opt for developing a number of additional / alternative indicators and measures to monitor progress in their respective countries.

The objective of such a comprehensive list of indicators is to provide guidelines for objective measurement and monitoring of the implementation of 3Rs to achieve the desired goals.

The countries may wish to develop their own sets of indicators in order to determine **specific, quantifiable targets within a timeframe** using the recommended set of indicators below, against which progress can be monitored and recorded in a systematic manner.

GOALS	MONITORING INDICATORS
<b>I. 3R Goals in Urban/Industrial Areas</b>	
a) 3Rs in municipal solid waste (MSW)	
1) Significant <b>reduction</b> in the quantity of <b>municipal solid waste</b> generated, by instituting policies, programmes and projects at national and local levels, encouraging both producers and consumers to reduce waste through greening production, greening lifestyle, and sustainable consumption.	<ul style="list-style-type: none"> <li>- Total generation of MSW per capita.</li> <li>- Total amount of MSW going to landfill.</li> <li>- Number of Integrated Solid Waste Management/3Rs or other relevant policies and programmes introduced at local levels.</li> <li>- Specific policies and mechanisms that lead to reduction of disposable plastic bags, packaging, and other single-use consumer products.</li> <li>- Annual government expenditure per capita on consumer awareness-raising.</li> <li>- Total waste disposed per capita.</li> </ul>
2) Full-scale utilization of the <b>organic component of municipal waste, including food waste</b> , as a valuable resource, thereby achieving multiple benefits such as the reduction of waste flows to final disposal site, reduction of GHG emission, improvement in resource efficiency, energy recovery, and employment creation.	<ul style="list-style-type: none"> <li>- Organic waste landfilled per capita, or per amount landfilled.</li> <li>- Amount of organic component of MSW composted.</li> <li>- Amount of organic waste component of MSW treated by anaerobic digestion.</li> <li>- Number of cities that have introduced successful source separation programmes.</li> <li>- Number of jobs in organic waste management (formal/informal).</li> <li>- Amount of organic waste component of MSW treated by waste-to-energy.</li> </ul>
3) Achieve significant <b>increase in recycling rate</b> of recyclables (e.g., plastic, paper, metal, etc.), by introducing policies and measures, and by setting up financial mechanisms and institutional frameworks involving relevant stakeholders (e.g., producers, consumers, recycling industry, users of recycled materials, etc.) and development of modern recycling industry.	<ul style="list-style-type: none"> <li>- Overall Recycling Rate (%).</li> <li>- Recycling rate (%) of paper.</li> <li>- Recycling rate (%) of plastic.</li> <li>- Market size of recyclables.</li> <li>- New policy/programme/system/measure introduced, or existing policy/programme/measure/system strengthened.</li> </ul>

	<ul style="list-style-type: none"> <li>- Number of state-of-art recycling facilities for key recyclables.</li> <li>- Employment in recycling industries.</li> <li>- Number of cities that have introduced successful source separation programmes.</li> </ul>
4) Build <b>sustainable cities /green cities</b> by encouraging “ <b>zero waste</b> ” through sound policies, strategies, institutional mechanism, and multi-stakeholder partnerships (giving specific importance to private sector involvement) with primary goal of <b>waste minimization</b> .	<ul style="list-style-type: none"> <li>- Number of cities adopting zero waste strategies.</li> <li>- National policies and programmes introduced/strengthened to support local authorities in implementing zero-waste programmes.</li> <li>- Number of public-private-partnerships in waste management.</li> <li>- Amount of private sector investment in waste management sector.</li> <li>- Number of registered private sector firms with track record of providing waste management services.</li> <li>- Number of cities that implement inclusive and integrated waste management systems that address the environmental, social, and labour (meaningful work) issues of waste, and include informal workers and organizations in their systems.</li> </ul>
b) 3Rs in Industrial sector (including SMEs)	
5) Encourage <b>private sector</b> , including small- and medium-sized enterprises ( <b>SMEs</b> ) to implement measures to increase <b>resource efficiency and productivity</b> , creation of decent work and to improve environmentally-friendly practices through applying environmental standards, clean technologies, and cleaner production.	<ul style="list-style-type: none"> <li>- Policy instrument(s) that support resource efficiency and productivity are introduced or strengthened at national and local levels.</li> <li>- Policy instruments are introduced aiming at improving labour conditions and eliminating substandard employment contracts.</li> <li>- Number of SMEs receiving expert advice, training, and other support from the Centre of Excellence for resource efficiency (e.g., Cleaner Production Centre).</li> <li>- Annual government expenditure on cleaner production programmes as a per cent of Gross domestic product</li> </ul>
6) Promote the <b>greening of the value chain</b> by encouraging industries and associated suppliers and vendors in socially responsible and inclusive ways.	<ul style="list-style-type: none"> <li>- Number of companies that have introduced green supply chain management.</li> <li>- Number of companies that have introduced green accounting/voluntary environmental performance evaluation (The International Organization for Standardization, 14000).</li> <li>- Number of companies that have introduced social accounting (SA 8000) in consultation with workers (and through Social Dialogue in the workplace).</li> <li>- Vocational training activities/ programmes on skills for green jobs in the waste management value chain incorporated in local/national Technical and Vocational Education and Training policies and programmes.</li> </ul>

7) Promote <b>industrial symbiosis</b> (i.e., recycling of waste from one industry as a resource for another), by providing relevant incentives and support.	<ul style="list-style-type: none"> <li>- Number of eco-industrial parks and the like.</li> <li>- Policy instrument(s) introduced or strengthened to incentivize industrial symbiosis.</li> <li>- Recycling rate (%) of industrial waste from selected sectors.</li> </ul>
8) Build <b>local capacity</b> of both current and future practitioners, to enable private sector (including SMEs) to obtain the necessary knowledge and technical skills to foster green industry and create decent, productive work.	<ul style="list-style-type: none"> <li>- Number of qualified technical advisors on resource/energy efficiency. Specific curricula developed and/or introduced for universities, business schools, employers organizations, worker's organizations, and vocational schools aiming at increased productivity including through improved working conditions and decent labour contracts.</li> <li>- Annual government expenditure on building capacity of SMEs in promoting environmentally-friendly technologies and practices.</li> </ul>
9) Develop proper <b>classification and inventory of hazardous waste</b> as a prerequisite towards sound management of hazardous waste.	<ul style="list-style-type: none"> <li>- Proper classification and inventory of hazardous waste developed.</li> </ul>
<b>II. 3R Goals in Rural Areas</b>	
10) <b>Reduce losses in the overall food supply chain</b> (production, post harvesting and storage, processing and packaging, distribution), leading to reduction of waste while increasing the quantity and improving the quality of products reaching the consumers.	<ul style="list-style-type: none"> <li>- Percentage of food loss at each stage of food supply chain.</li> </ul>
11) Promote full-scale <b>use of agricultural biomass waste and livestock waste</b> through reuse and/or recycling measures as appropriate, to achieve a number of co-benefits including GHG emission reduction, energy security, sustainable livelihoods in rural areas, and poverty reduction, among others.	<ul style="list-style-type: none"> <li>- Amount of agricultural biomass waste and livestock waste recycled.</li> <li>- Number of new projects initiated that use agricultural biomass waste and livestock waste as material inputs.</li> </ul>
<b>III. 3R Goals for New and Emerging Wastes</b>	
12) Strengthen regional, national and local efforts to address the issue of <b>waste, in particular plastics</b> in the marine and coastal environment.	<ul style="list-style-type: none"> <li>- Number of coastal cities with complete ban on use of plastics packaging materials.</li> <li>- Issues of plastic waste considered as part of integrated coastal zone management (ICZM) plans.</li> <li>- National policies concerning plastic waste developed or strengthened, taking into consideration the impacts of plastic waste in marine and coastal environment.</li> <li>- Regional initiatives initiated/ strengthened to address the issue of plastic waste in the marine and coastal environment.</li> </ul>

<p>13) Ensure <b>environmentally-sound management of e-waste</b> at all stages, including collection, storage, transportation, recovery, recycling, treatment, and disposal, with appropriate considerations on working conditions, including <b>health and safety aspects</b> of those involved.</p>	<ul style="list-style-type: none"> <li>- Formal standards, certification system, and licensing procedures established and enforced.</li> <li>- Technical support services made available to informal sector and SMEs involved in e-waste management, that have raised awareness of workers and employers on the hazards of e-waste management and recycling at all stages.</li> <li>- Presence of, and access to, appropriate health-care services for informal sector workers.</li> <li>- Number of state-of-the-art recycling facilities for e-waste (such as mobile phones at their end-of-life).</li> <li>- Guidelines on environmentally-sound management of e-waste at all stages, including Occupational safety and health standards, appropriate work spaces, and infrastructure, and protective working equipment developed and incorporated into local regulatory frameworks.</li> </ul>
<p>14) Effective enforcement of established mechanisms for preventing illegal and inappropriate export and import of waste, including transit trade, especially hazardous waste and e-waste.</p>	<ul style="list-style-type: none"> <li>- Reduction in the number of incidents of illegal export/import of e-waste against a measured baseline in a specific year.</li> <li>- Number of well-trained customs officials tracking illegal export/import.</li> </ul>
<p>15) Progressive implementation of “<b>extended producer responsibility (EPR)</b>” by encouraging producers, importers, and retailers and other relevant stakeholders to fulfill their responsibilities for collecting, recycling, and disposal of new and emerging waste streams, in particular e-waste.</p>	<ul style="list-style-type: none"> <li>- New EPR policies enacted, or existing policies strengthened.</li> <li>- List of (or number of) products and/or product groups targeted by EPR nationally.</li> </ul>
<p>16) <b>Promote 3R concept</b> in health-care waste management.</p>	
<p><b>IV. 3R Goals for Cross-cutting Issues</b></p>	
<p>17) Improve <b>resource efficiency and resource productivity</b> by greening jobs nation-wide in all economic and development sectors.</p>	<ul style="list-style-type: none"> <li>- Economy-wide Material Flow Accounting indicators, such as Total Material Requirement, Direct Material Input, and Domestic Material Consumption.</li> <li>- Energy efficiency schemes.</li> <li>- Product standards.</li> <li>- Guidelines on greening, including waste management businesses and jobs.</li> <li>- Number of green jobs, taking into consideration nationally-defined indicators.</li> <li>- Number of decent jobs, particularly in the areas of waste reduction and recycling, green product design and other green sectors.</li> </ul>

18) Maximize co-benefits from waste management technologies for local air, water, oceans, and soil pollution and global climate change.	
19) Enhance <b>national and local knowledge base and research network on the 3Rs and resource efficiency</b> , through facilitating an effective and dynamic linkage among all stakeholders, including governments, municipalities, the private sector and scientific communities.	<ul style="list-style-type: none"> <li>- Policies introduced/strengthened, encouraging interaction between universities and private sector.</li> <li>- Number of collaborative projects, joint conferences and seminars by universities, government, and private sector.</li> <li>- Annual government expenditure in support of research and development on the 3Rs.</li> </ul>
20) Strengthen multi-stakeholder partnerships among governments, civil society, and the private sector in raising public awareness and advancing the 3Rs, sustainable consumption and production, and resource efficiency, leading to the behavioural change of citizens and change in production patterns.	<ul style="list-style-type: none"> <li>- Number of NGOs actively engaged in 3R promotion (e.g., waste reduction, recycling, composting, and green purchasing).</li> <li>- Annual government expenditure on public extension programmes.</li> <li>- Existence of national association of waste management and recycling professionals.</li> <li>- Charge for garbage collection.</li> <li>- Existence of ad-hoc multi-stakeholder committee to promote the 3Rs.</li> </ul>
21) <b>Integrate the 3Rs</b> in formal education at primary, secondary, and tertiary levels as well as non-formal education such as community learning and development, in accordance with Education for Sustainable Development.	<ul style="list-style-type: none"> <li>- Number of universities offering courses on the 3Rs and waste management at undergraduate or post graduate levels that include technical procedures, and environmental and social/labour impacts and opportunities.</li> <li>- Waste management, as a social and environmental challenge and the 3Rs and waste issues integrated into school curriculum.</li> <li>- Existence of community-based 3R activities.</li> </ul>
22) <b>Integrate the 3R concept</b> in relevant policies and programmes, of key ministries and agencies such as Ministry of Environment, Ministry of Agriculture, Forestry and Fisheries, Ministry of Industry, Ministry of Trade and Commerce, Ministry of Energy, Ministry of Water Resources, Ministry of Transport, Ministry of Health, Ministry of Construction, Ministry of Finance, Ministry of Labour, Ministry of Land and Urban Development, Ministry of Education, and other relevant ministries towards transitioning to a resource efficient and zero waste society.	<ul style="list-style-type: none"> <li>- Existence of a national 3R task force.</li> <li>- Number of sectoral policies and programmes that have integrated 3R concepts.</li> <li>- Number of cities introducing state-of-the-art 3R technologies in various sectors.</li> </ul>
23) Promote <b>green and socially-responsible procurement</b> at all levels, thereby creating and expanding 3R industries and markets for environmentally-friendly goods and products.	<ul style="list-style-type: none"> <li>- Number of government ministries that have adopted green procurement policy.</li> <li>- Eco-labels / eco-labeling schemes.</li> <li>- Labour standards, in particular safety of workers, embedded in waste management contracts.</li> <li>- Incentives in place for large-scale contractors to employ and train informal waste workers as needed.</li> <li>- Number of cities that have adopted green</li> </ul>

	procurement policy.
24) <b>Phase out harmful subsidies that favour unsustainable use of resources (raw materials and water) and energy</b> , and channel the freed funds in support of implementing the 3Rs and efforts to improve resource/energy efficiency.	<ul style="list-style-type: none"> <li>- Subsidies that favour unsustainable use of resources and energy are phased out.</li> <li>- Policy instruments(s) and programmes are in place in support of 3Rs and resource/ energy efficiency.</li> </ul>
25) <b>Protect public health and ecosystem, including freshwater and marine resources by eliminating illegal</b> activities of open dumping, including dumping into the oceans, and controlling open burning in both urban and rural areas.	<ul style="list-style-type: none"> <li>- Number of cities with open dumping/open burning.</li> <li>- Number of major rivers with open dumping and direct discharge of untreated domestic waste and industrial effluents.</li> <li>- Biological Oxygen Demand of major rivers, lakes, etc.</li> </ul>
26) Facilitate the international circulation of re-usable and recyclable resources as well as remanufactured products as mutually agreed by countries and in accordance with international and national laws, especially the <i>Basel Convention</i> , which contributes to the reduction of negative environmental impacts and the effective management of resources.	<ul style="list-style-type: none"> <li>- Existence of framework for bilateral and multilateral cooperative activities toward efficient, legal, and appropriate trade of circulative resources.</li> <li>- Number of facilities certified by authorized bodies for environmental standard certification.</li> <li>- Market size of waste management and recycling industry.</li> <li>- Number of eco-industrial parks.</li> </ul>
27) Promote data collection, compilation, and sharing, public announcements and application of statistics on waste and the 3Rs, to understand the state of waste management and resource efficiency.	<ul style="list-style-type: none"> <li>- Existence of basic data on wastes and the 3Rs (such as material flow, resource productivity, cyclical use rate, amount of final disposal, and amount of exports and imports of wastes and recycled materials) required for 3R policy-making, planning, implementation, and monitoring.</li> <li>- Number of access to websites providing information on wastes and the 3Rs.</li> </ul>
28) Promote heat recovery (waste-to-energy), in case wastes are not re-usable or recyclable and proper and sustainable management is secured.	<ul style="list-style-type: none"> <li>- Existence of incentives to promote heat recovery.</li> <li>- Number of facilities equipped with heat recovery system.</li> </ul>
29) Promote overall regional cooperation and multi-stakeholder partnerships based on different levels of linkages such as government-to-government, municipality-to-municipality, industry-to-industry, (research) institute-to-institute, and NGO-to-NGO. Encourage technology transfer and technical and financial supports for 3Rs from developed countries to less developed countries.	
30) Pay special attention to issues and challenges faced by developing countries including SIDS for achieving sustainable development.	<ul style="list-style-type: none"> <li>- Number of 3R related projects implemented.</li> <li>- Number of 3R related projects linked to Climate Change, Biodiversity, Disaster Management, Tourism, and Industry.</li> </ul>

<p>31) Promote 3R + “Return” concept which stands for Reduce, Reuse, Recycle and “Return” where recycling is difficult due to the absence of available recycling industries and limited scale of market in SIDS, especially in the Pacific Region.</p>	<ul style="list-style-type: none"> <li>- Number of countries that have developed the 3R (+ “Return”) strategy.</li> <li>- Number of countries that have developed and implemented economic instruments such as the container deposit programme, etc.</li> <li>- Number of recycling companies/organizations that have been trained on basic technique for recycling (preliminary processing).</li> <li>- Implementation of periodical review on “Return” collaboration between the Asia-Pacific countries through 3R Forum in Asia.</li> </ul>
<p>32) Complete elimination of illegal engagement of children in the <b>informal waste sector</b> and gradually <b>improve</b> working conditions and livelihood security, including <b>mandatory provision of health insurance</b> for all workers.</p>	<ul style="list-style-type: none"> <li>- Number of children in hazardous child labour (ILO definition) in waste sector (target set for 0).</li> <li>- Clear policy framework for informal waste sector integration in place.</li> <li>- Effective policy framework for integrating informal waste activities into integrated waste management schemes.</li> <li>- Waste pickers provided with contributory social security.</li> <li>- Landfill sites accessible only to registered waste pickers.</li> <li>- Number of workers in informal and formal sector with access to social security and/or health care services.</li> <li>- Number of labour inspections in waste sector.</li> </ul>
<p>33) Promote 3Rs taking into account gender considerations.</p>	