

CONCEPT NOTE

Sixth Regional 3R Forum in Asia and the Pacific

16-19 August 2015

Venue: Dharubaaruge, Malé, Maldives

Theme: 3R as an Economic Industry- Next Generation 3R Solutions for a Resource Efficient Society and Sustainable Tourism Development in Asia and the Pacific

1. BACKGROUND

The Asia-Pacific region is experiencing the fastest rate of urbanization among all the regions of the world. The countries face tremendous challenge in managing their natural and ecologically assets sustainably, and at the same time, dealing with growing volume and diversification of various waste streams, mainly as a result of unsustainable production and consumption. As the Asian countries industrially and economically grow, the new emerging waste streams, such as industrial waste, electronic waste, plastics in coastal and marine environment, construction and demolition waste, hazardous waste and chemicals have become matters of serious concern for sustainability. These issues have reached a stage which is beyond the capacity of developing cities and municipalities to manage by themselves.

These trends and developments inevitably calls for decoupling economic growth from resource use and environmental degradation, which is one of the key features of 3R in the context of achieving resource efficiency leading to green economy and sustainable development. Greening economy refers to the process of reconfiguring businesses and infrastructure to deliver better returns on natural, human and economic capital investments, while at the same time reducing greenhouse gas emissions, extracting and using less natural resources, generating less waste and reducing social disparities (UNEP, 2011).

Though a number of countries in Asia-Pacific region have successfully integrated 3R and resource efficiency in their national development plans, including macro-economic policies, much more efforts are still required at city, provincial, regional and national level to truly achieve a resource efficient society in the region. The region needs to address an alternative method of growth that would favor policies, programmes, institutions and technological interventions towards sustainable use of resources, thereby preventing unsustainable generation of waste that has to be ultimately managed.

The Rio+20 outcome document - The Future We Want has recognized that poverty eradication, enabling sustainable patterns of consumption and production, and managing the natural resource base of social and economic development are important goals for all nations. The past Regional 3R Forums in Asia and the Pacific have called for effective implementation of 3R policies and programmes, including infrastructure measures and technological interventions, in a wide range of development sectors, such as industry, energy, agriculture, tourism, and urban development, etc., towards transitioning to a resource efficient society.

The outcome of Ha Noi 3R Forum (2013) and Surabaya 3R Forum (2014), in particular, recognized the fact that sustainable resource use would be instrumental for Asia-Pacific to ensure prosperity and human development in a world in which natural resources (virgin raw materials, water, minerals, timbers, etc.) are more constrained and the absorptive capacity of natural ecosystems is decreasing rapidly. There have been increasing realization on the importance of 3R and resource efficiency towards public health and social well-being, water security, economic prosperity, and environmental protection under the post-2015 development agenda.

Key message from Hanoi 3R Forum (2013)

- Rapidly increasing volume, changing characteristics of urban and industrial waste, rising population, increasing consumption and per capita waste generation have posed serious challenges for the sustainability of the region.
- Sustainable resource use will be instrumental for Asia-Pacific to ensure socio-economic development in a world in which resources are more constrained and the absorptive capacity of ecosystems is decreasing rapidly.
- Resource-efficient economic behavior is important in Asia because of its large population, population density, its growing dependence in sourcing natural resources from global markets, and the need to improve the material standard of living of its people.
- 3R is intrinsically linked with resource efficiency in a wide range of key development sectors including, agriculture, industry and energy.
- 3R and resource efficiency are key enablers for transitioning to a green economy.

The Small Island Developing States (SIDS) of the region face a varying degree of waste management and sustainability issues in view of their unique geographical features, remoteness, resource limitations and scale of vulnerability to climate change and natural disasters. The “S.A.M.O.A. Pathway”, the outcome document of the 3rd International Conference on Small Island Developing States, 1-4 Sep 2014, Apia, Samoa, UN member countries have called for implementation of 3R+R (reduce, reuse, recycle and return) through capacity building and environmentally appropriate technologies, partnerships among and broad alliance of people, government, civil society and the private sector.

Environment, tourism and economy are closely linked. Tourism has contributed much to the economic development of many countries of the region and will continue to be important driver for their future growth in the region. Tourism in many part of the region, including SIDS, has been highly associated with generating tax revenues, employment opportunities for the local people and infrastructural development. However, tourism which is largely based on the enjoyment of an unspoilt and clean environment can be badly affected by poor waste management practices. Poor waste management practices and uncontrolled littering will detract from the appeal of a destination to national and international tourists and can lead to negative publicity and reduction in visitor numbers. For instance, in case of many SIDS or coastal cities, the state of their environment, ocean ecosystem, tourism potential and business opportunities are closely tied to each other in a mutually beneficial way. Limited availability of land, resources and technology combined have become major drivers for waste management problems and related

health and environmental degradation in SIDS. The specific actions are required at the regional, national and international levels to support sustainable development of tourism, especially in the area of waste management such as to minimize and/or convert the waste into a resources through recycling or processing.

As a result of increasing tourism infrastructure (hotels, restaurants, entertainment facilities) environmental concerns include, but are not limited to overconsumption of natural resources (drinking water, food, electric power, etc.), marine and freshwater pollution, increased waste production, and changes in land use or land cover, especially through creation or overuse of landfills (UNEP, 2005). The outcome of the UN SIDS Conference in Apia in 2014 has called for developing and implementing policies that promote responsive, responsible, resilient and sustainable tourism.

To this regard, the Sixth Regional 3R Forum in Asia and the Pacific, under the theme of “*3R as an Economic Industry Next Generation 3R Solutions for a Resource Efficient Society and Sustainable Tourism Development in Asia and the Pacific*” will not only call for innovative, effective and smart solutions (policy, institution, technology, infrastructure, financing and partnerships) towards effective implementation of Ha Noi 3R Declaration (2013-2023), but will also provide a unique opportunity to discuss various economic and employment opportunities in 3R areas taking into account the diverse socio-economic situation across the region as well as the limitations of SIDS. Keeping in mind the economic interest of SIDS, the Forum will also aim to address the contribution of 3R towards increasing or creating economic opportunities with more environmentally sustainable tourism.

The critical nexus exists between water security and waste management in Asia-Pacific countries cannot be ignored. The type and level of waste management activities is one of the important drivers for water quality, quantity and security in many countries of the region. For instance, 80 percent of pollution of Yamuna River in India is the result of discharge of raw sewage (CSE, 2014). The river receives more than three billion liters of waste per day. As per the survey of Centre for Science and Environment (CSE) in India, 70-80 percent of India's wastewater and 80 percent of urban waste

Key message from Surabaya 3R Forum (2014)

- Wastes and emissions are intrinsically linked with overall resource use; natural resources and ecological assets are being used at increasing rate enabling economic growth and fuelling unprecedented grow of cities;
- The goal of improving resource efficiency and reducing the waste and emission intensity for Asia-Pacific economies has become a significant driver of government policies and programs;
- Establishing new forms of cooperation and partnerships between govt, business, community will underpin successful implementation of 3Rs.
- 3R needs to be linked to other policy domain such as climate mitigation and adaptation, energy and water security, urban air pollution, and supply security of critical natural resources.
- Eco-parks and eco-towns need to encompass a range of eco-initiatives including biodiversity and resource efficiency and promote it across the region.
- Triangular cooperation (Govt-Scientific-Private) is key to develop viable and effective business models in 3Rs and waste management.
- Establishment of research, innovation and practice (RIP) parks in the region should be established and support Waste to Resource (W2R).
- Sustainability and resiliency of cities, and thereby the role of 3Rs, are critically important in post 2015 development agenda.
- 3R+R (reduce, reuse, recycle and return), regional cooperation and partnerships are key to sustainable waste management in Small Island Developing States (SIDS). Plastic litter is a major pollution issue in coastal and marine environments of SIDS and needs special attention. Integration of 3R in regional programmes dealing with climate change, disaster management, and biodiversity management should be considered as a priority

Source: 5th Regional 3R Forum in Asia and the Pacific, 2014

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ends up in its rivers and lakes. The Energy and Resources Institute (TERI) in India has estimated that by 2047, waste generation in India's cities will increase by five-fold to touch 260 million tons per year. This will have severe implication on India's freshwater resources unless this critical nexus is addressed and robust 3R policies, programmes and infrastructures are in place. In many developing countries, highly contaminated leachate seeps untreated into groundwater, a vital source of drinking water.

The main source of water supply in many SIDS are dependent on groundwater, and the withdrawal rate often exceeds the natural recharge rate. Island countries are extremely sensitive to natural disasters such as typhoons, hurricanes, cyclones and rising sea level that make their freshwater resources more vulnerable (UNEP, 2002). At the same time, a competitive advantage of many SIDS within the tourism industry of are the pristine waters, beaches and biodiversity that attract tourism activities as a major source of their GDP. The common threat to the freshwater resources is the contamination of supply by human and livestock waste, industry-related pollution, pesticides and agrochemicals. For instance, due to increasing demand from population growth, particularly in Malé, salt water intrusion, pollution of groundwater from release of untreated sewage, industrial effluent and poor agricultural practices, the Maldives face tremendous challenge to meet its freshwater needs. The issue of freshwater resources for SIDS must be addressed in a comprehensive, multi-sectoral and integrated way (UNEP, 2002). It is important to build the capacity of SIDS to manage water resources in a holistic way including addressing the nexus between freshwater, coastal and marine environment and ecosystem and 3R+Return.

Marine and coastal environment are vital resource for a socio-economic development of the region. Marine species provide many ingredients for food, medicines and industrial products such as cosmetics, chemicals and dyes. Coastal ecosystems such as coral reefs, mangroves, sea-grass bed, estuaries, coastal lagoons and wetlands serve as nursery grounds to commercial fish species and also play important roles in providing protection from storms and tidal waves. The major threats to the health, productivity and biodiversity of the marine and coastal environment result from human activities on land and inland activities such as physical alterations of the coastal zone. Around 80% of the pollution load in the ocean originates from land-based activities, including municipal, industrial and agricultural wastes and runoff and atmospheric deposition (UNEP/GPA, 2001). Plastic litter has become a critical concern in coastal and marine environments of the region. Plastics are a modern waste stream which is typically discharged from the land during run-off events. Plastics usually float and can travel long distances across oceans, and often accumulate in Plastics in the marine environment progressively break down into micro-plastics (diameter < 5 mm) making their management increasingly difficult. Plastics can have a range of impacts in the marine environment including smothering, entanglement, and physical effects arising from plastic ingestion, and from the transfer of hydrophobic persistent organic pollutants (including PCBs, DDTs, and HCHs) from the plastic when it is ingested. The transferred POPs may cause endocrine disruption and reproductive impacts in affected animals and birds. Utilizing end-of-life plastic as a valuable resource could be integral part of the waste reduction strategy leading to circular economy. This is one of the challenging areas which will systematically require capacity building of developing countries and SIDS for science-based policy decisions at all levels.

3R policies and enforcement of Extended Producer Responsibility (EPR) are very closely embedded in a circular economy. Product redesign, eco-products and services, state-of-art technologies, new and innovative business models are integral components of a circular economy and green economy. Circular economy refers to the sustainable use of product and to recover

them with the closed-loop system to promote the growth of waste market and generate multiple economic benefits for the region. Asia-Pacific, a region of rapid urbanization and home to many mega cities, faces enormous challenges for sustained supply of natural resources (raw material, mineral, timber, water and energy, etc.), and it would be increasingly essential for the emerging economies as well as developing countries of the region to integrate EPR policies in national development plans in support of resource recovery, resource efficiency and creating environmental business opportunities.

Implementation of 3R and resource efficiency related policies and programmes is inherently a multi-stakeholder process which calls for multilayer partnerships within and between communities, businesses, industries and government sector. Public-private-partnerships (PPP) identify and provide the win-win solutions both for the public and private sector to promote 3R as an economic industry, if duly supported by appropriate policy and regulatory framework. PPP could lead to big savings in terms of waste budgets of municipal or city authorities, while the private sector can use the opportunity to convert wastes into useful resources, eco-products, waste to energy and promote green jobs that could also serve as a major driver for local entrepreneurship development and income generating opportunities for the region.

Resource efficiency is becoming an important driver for economic successes in a world where resources are scarce and finite. The Government of the Maldives, the host of the 6th Regional 3R Forum in Asia and the Pacific, views the environment as an economic industry. Any form of environmental degradation would negatively affect its tourism sector, a major contributor to the economy of the Maldives. This is also applicable to many countries, including SIDS. Addressing 3R as an economic industry would further help mainstream 3R and resource efficiency in key socio-economic development sector of Asia-Pacific countries in an integrated manner. 3R and resource efficiency can stimulate - innovation, partnerships, investment in research and development (R&D) and ultimately business and economic opportunities through innovation.

2. OBJECTIVES

The objectives of the Sixth Regional 3R Forum in Asia and the Pacific are to:

- Discuss and explore the various policy options, institutional measures, partnership mechanisms and technological interventions to harness economic opportunities through wide scale application of 3R and resource efficiency in key development sectors, including tourism industry;
- Discuss and address 3R science-policy-business interface with an objective to turn the wastes into resource and potential for economic opportunities at national and local level;
- Identify and discuss how Asia-Pacific countries can realize smart, resilient, inclusive and livable cities through next generation 3R solutions;
- Address potential contribution of 3R towards water security in Asia and the Pacific;
- Draw 3R synergy programmes in sustainable urban management with expanding national financial infrastructure and involvement of public private partnerships (PPPs);

- Discuss potential role of circular economy and extended producer responsibility (EPR) in promoting 3R as an economic industry in Post 2015 development scenario;
- Assess country progress and discuss issues, challenges and opportunities in implementing the Hanoi 3R Declaration (2013-2023), including modalities for developing a State of the 3Rs in Asia and the Pacific to better guide implementation through improved knowledge base (data, information, indicators, experts, institutions, etc.) and network; and
- Discuss the 3R and resource efficiency in the context of sustainable development of SIDS issues, linking to the outcome of UN Conference on SIDS in Apia - the “*S.A.M.O.A. Pathway*”.

3. EXPECTED OUTCOME

The Sixth Regional 3R Forum in Asia and the Pacific will not only discuss innovative, effective and smart solutions (policy, institution, technology, infrastructure, financing and partnerships) towards effective implementation of Ha Noi 3R Declaration (2013-2023), but will also provide a unique opportunity to discuss various economic and employment opportunities in 3R areas keeping in mind the diverse socio-economic situation across the region as well as the limitations of SIDS and the post-2015 development scenario.

As an official pre-event of the Forum, the Government of Maldives will organize a National 3R Day on 16 August 2015, where the private resorts of Maldives are expected to sign a 3R Declaration in order to express their commitment towards sustainable tourism and protection of local environment and marine ecosystem.

4. CO-ORGANIZERS

The Sixth Regional 3R Forum in Asia and the Pacific will be co-organized by the Ministry of Environment and Energy (MEEE) of Maldives, Ministry of Tourism (MoT) of Maldives, Ministry of the Environment (MoE) of the Government of Japan and United Nations Centre for Regional Development (UNCRD) with supports from various international organizations, partner institutions and donor agencies.

5. SUPPORTING ORGANIZATIONS

The conference is expected to be supported by various international organizations and donor agencies such as - United Nations Environment Programme -IETC and IRP, Environmental Protection Agency Ministry of Environment and Energy Maldives (EPA/MEE), Japanese Technical Cooperation Project for Promotion of Regional Initiative on Solid Waste Management in Pacific Island Countries (J-PRISM) / Japan International Cooperation Agency (JICA), Institute for Global Environmental Strategies (IGES), Zero Waste South Australia, South Asia Co-operative Environment Programme (SACEP), Secretariat of the Pacific Regional Environment Programme (SPREP), and others.

6. GEOGRAPHIC COVERAGE

The geographic coverage of the Forum has gradually expanded to encompass more than thirty five member countries from Asia and the Pacific region, including Association of Southeast Asian Nations (ASEAN), Australia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, People's Republic of China, India, Indonesia, Japan, Republic of Korea, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, the Philippines, Singapore, Sri Lanka, Thailand, Timor-Leste, Viet Nam, New Zealand and selected Small Island Developing States (SIDS) from Pacific.

7. PARTICIPANTS

Participation in the Forum is by invitation only. It is expected that approximately 500 participants, including high-level government representatives from Asian-Pacific countries, City Mayors, international experts and resource persons, and others as listed below will attend the Forum:

- High level government representatives and policy makers from relevant Ministries such as Ministry of Environment, Ministry of Public Works, Ministry of Local Government, Ministry of Urban Development, Ministry of Industry, Ministry of Tourism etc.;
- City Mayors/Local Government representatives;
- Experts and international resource persons, including representatives of scientific and Research and Development (R&D) institutions in the areas of 3R/resource efficiency/waste management;
- Representatives of UN and international organizations, including international financial institutions, multi-lateral development banks and donor agencies;
- Representatives of the private and business sector and NGOs etc.

A limited number of travel supports will be available on a priority basis for nominated government representatives from the developing countries and invited experts/international resource persons. Unless otherwise stated in the official invitation, the participants are requested to kindly cover their own travel and accommodation costs through their organizations or external sponsorships.

8. OFFICIAL PRE-EVENT, SIDE-EVENT, SPECIAL EVENT

1) Maldives National 3R Day- “Our Environment-Our Economy, Our Future”

Co-organizers: MEE-Maldives, MOT-Maldives, UNCRD

Date: 16 August 2015 (Time: 8:45-12:00)

Venue: Rannaban'deyri Hall

2) Side-Event- "Signing of Saafu Raajje Declaration by the City and Atoll Councils of the Maldives"

Co-organizers: Government of Maldives

Date: 16 August 2015 (Time: 14:30-16:30)

Venue: Faashanaa Maalan

3) Side-Event- "2015 Male Workshop on Multilayer 3R Partnerships and Cooperation among Asia-Pacific Cities ~ Building on the Outcomes of 2014 Chiba Workshop towards Realizing Smart, Resilient, Inclusive, Low Carbon and Sustainable Cities and Communities"

Co-organizers: MOE-Japan (By Invitation Only)

Date: 16 August 2015 (Time: 15:00-17:00)

Venue: Room 8

As side-event of the Sixth Regional 3R Forum in Asia and the Pacific, the workshop aims to follow up the outcome of discussions at "2014 Chiba Workshop on Multilayer 3R Partnerships and Cooperation among Asia-Pacific Cities" on 12 November 2014. It reiterates importance of multilayer partnerships for the 3R promotion and provides an opportunity for further discussion towards building resource efficient Asian Cities with identifying roles of Japanese cities and communities, which will be useful input to the 6th Regional 3R Forum in Asia and the Pacific.

4) NGO Event- "The Sixth Asia 3R Citizens Forum ~ Creating a Closed-Loop Community based on 3Rs practice in Asia and Pacific Islands ~"

Co-organizers: Live & Learn Maldives and Asia 3R Citizens Network

Date: 16 August 2015 (Time: 13:30-18:00)

Venue: Room 2

Purpose: This event will take place as a side event of Sixth Regional 3R Forum in Asia and the Pacific. The purpose of this forum is to share methods, knowledge and technique each NGO has done to challenge environmental issues, such as organic waste, environmental education, clean-up action in tourism spots and so on. Through a workshop in the forum, we will seek for solution we can apply to own community and we sure get something which leads 3R actions to create closed-loop communities in Asia and the Pacific.

Background: As a result of rapid economic growth in Asia over recent years, wasteful lifestyles built upon "mass production, mass consumption and mass disposal" have become common. This has led to critical problems, including the global depletion of natural resources, the spread of environmental pollution, and global warming. We're all facing similar environmental problems in Asia and the Pacific.

Improving the well-being of present and future generations through the promotion of sustainable development, we, citizens living in Asia and the Pacific have to work together to achieve a sustainable society in cooperation with national government, municipalities, businesses and CSO as well.

The Asia 3R Citizens Network was formally established in 2010 as the successful outcome of the First Asia 3R Citizens Forum in order to form a partnership with NGOs in Asia and the Pacific. Since then, we've been sharing ideas and good practices with each other. We've solved waste

problems step by step with applying methods and technical skills we shared to each specific case in each county or community.

5) International 3R Exhibition

Co-organizers: MEE-Maldives, MOT-Maldives, MOE-Japan, UNCRD

Dates: 17-19 August 2015

Venue: Dharubaaruge, Malé

As a side-event of the Sixth Regional 3R Forum in Asia and the Pacific, an international 3R exhibition is open to all exhibiting companies wishing to advertise of their technologies related to promote 3R and recycling industry. It is the showcase for representatives from the environmental departments/organizations as well as create opportunities for business development.

6) Special Luncheon Session of International Resource Panel (IRP)/UNEP on 3Rs

Co-organizers: International Resource Panel (IRP)/UNEP, MEE-Maldives, MOT-Maldives, MOE-Japan, UNCRD

Date: 17 August 2015 12:30-13:30 (Part-1)

Date: 18 August 2015 13:00-14:00 (Part-2)

Venue: Dhoshimenyaa Hall (Second Floor)

Purpose: This event will take place as an integrated part of Sixth Regional 3R Forum in Asia and the Pacific. The purpose of the session is to provide the audience with the latest scientific findings on challenges, opportunities and policy options on resources management, recycling and remanufacturing, including knowledge on the potential of remanufacturing, the environmental benefits of recycling, and the current recycling technologies and opportunities.

Background: The world economy, and the quality of our lives, now depend on massive use of natural resources. Current patterns of consumption and production, with their huge and growing demands for materials, energy and water and impacts on the environment, are beginning to threaten the safety and wellbeing of people and to undermine the life support systems of the planet.

To understand the gravity of the situation and find policy action to address it, The International Resource Panel (IRP) was launched in 2007 by United Nations Environment Programme (UNEP) to provide decision makers and other interested parties with independent and authoritative scientific assessments about the use of natural resources and its environmental impacts.

Up to date the IRP has produced over 12 scientific assessments that crystallize the latest scientific, technical and socio-economic literatures on global resource use with the objective of improving the sustainable management of natural resources and contributing to decoupling of escalating resource use and environmental impact from economic growth.

Speakers: Presentations are programmed to be held by the below panel members and experts:

- **Dr. Nabil Z. Nasr**, Associate Provost for Academic Affairs and Director of Golisano Institute for Sustainability at Rochester Institute of Technology (RIT) and Founder of RIT's Center for Remanufacturing and Resource Recovery, Leading the IRP new work stream on remanufacturing.
- **Dr. Markus Reuter**, Director of Technology Management at Outotec, Finland, Adjunct Professor at Aalto University, School of Chemical Technology, Department of Materials Science

and Engineering, a lead author of the IRP report “ Metal Recycling: Opportunities, Limits, Infrastructure”.

- **Dr. Patrice Christmann**, Deputy Director, Corporate Strategy, in charge of the BRGM’s Research and Development Strategy in the mineral raw materials, a member of the permanent EC Working group on raw material supply, a member of the EU High-level Group steering the European Innovation Partnership on raw materials and has contributed to the drafting of the EU-level, comprehensive, non-energy raw materials related research agendas. He is an IRP member and a member of its ‘Mineral and Metals’ working group.

9. SECRETARIAT OF THE REGIONAL 3R FORUM IN ASIA-PACIFIC

Environment Unit
United Nations Centre for Regional Development
1-47-1, Nagono, Nakamura-ku
Nagoya 450-0001, JAPAN
Tel: +81-52 561 9417 / 9416 / 9531
Fax: +81-52 561 9374
E-mail: 3R@uncrd.or.jp