United Nations Centre for Regional Development
UNCRD

# Promotion of 3R in Asia and the Pacific – Issues, Challenges and Opportunities

***Expert Conference on Development of Island's Sustainable Societies***
***29-30 June 2014, Okinawa, Japan***

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# Regional 3R Forum in Asia-Pacific

**(a joint initiative of UNCRD and MoE-Japan)**

**Goal:** To achieve low carbon and sound material cycle societies in Asia through facilitating bilateral and multilateral cooperation for increasing resource and energy efficiency through the 3Rs, and for promoting environmentally sound management of wastes in the region; to set in motion a regional mechanism to address 3R issues, needs and priorities in Asian countries, including emerging issues of concern in waste management (Tokyo 3R Statement, 2009).


(Photo: 5th Regional 3R Forum in Asia and the Pacific, Surabaya, Indonesia, 25-27 Feb 2014)

**Objectives:**

(a) facilitate **high-level intergovernmental policy dialogues** on 3R issues, challenges, & opportunities;

(b) facilitate **improved dialogue and cooperation with international organizations and donor communities** for materializing and implementation of 3R projects at local and national level identified through national 3R strategies;

(c) provide a **strategic and knowledge platform** for sharing experiences and disseminating among Asian countries best practices, tools, technologies, policy instruments on various aspects of the 3Rs;

(d) provide a platform to develop **multilayered networks of and partnerships among stakeholders** such as governments, academia, scientific and research community, private sector, and NGOs;

(e) generate international consensus and understanding on the beneficial aspects of the 3Rs in the context of achieving **MDGs (+ post 2015 development agenda~SDGs), resource and energy efficiency, resource efficient economy, and climate change mitigation**; and to

(f) provide a platform for **proliferation of national 3R strategies** in developing countries.

*3Rs in the context of* ***Green Economy***

***3Rs in a broader context*** *- not just about municipal waste management, but is intrinsically linked with* ***resource efficiency*** *in a wide range of sectors with an objective to reduce or eliminate the waste load for final disposal towards transitioning to a resource efficient and green economy*

***Multilayer Partnerships and Coalition as the Basis for 3R's Promotion***

*3Rs in the context of* ***Rio+20 outcome – The Future WeWant***

**Pacific SIDS countries join 3R Forum**

**1st Regional 3R Forum in Asia** — Japan/2009

**2nd Regional 3R Forum in Asia** — Malaysia/2010

**3rd Regional 3R Forum in Asia** — Singapore/2011

**4th Regional 3R Forum in Asia** — Viet Nam/2012

**5th Regional 3R Forum in Asia-Pacific** — Indonesia/2014

**Tokyo 3R Statement**

**Singapore Recommendation**

**Surabaya 3R Declaration**

**Ha Noi 3R Declaration (2013-2033)**

**33 Goals** for Urban/Industrial areas, Rural areas/Biomass, New and Emerging Wastes, Cross-cutting issues

**2nd East Asia Summit - Environment Ministers Meeting (EAS EMM), Brunei, 2010** → Endorsed Regional 3R Forum in Asia

RIO+20 United Nations Conference on Sustainable Development

Post-2015 Sustainable Development Agenda / SDGs

- **3R for Green Economy**
- **3Rs for Sustainable Cities and Human Settelment (Healthy & Safe)**
- **3Rs for Costal & Marine Ecosystem**
- **Needs for Innovative Partnerships**

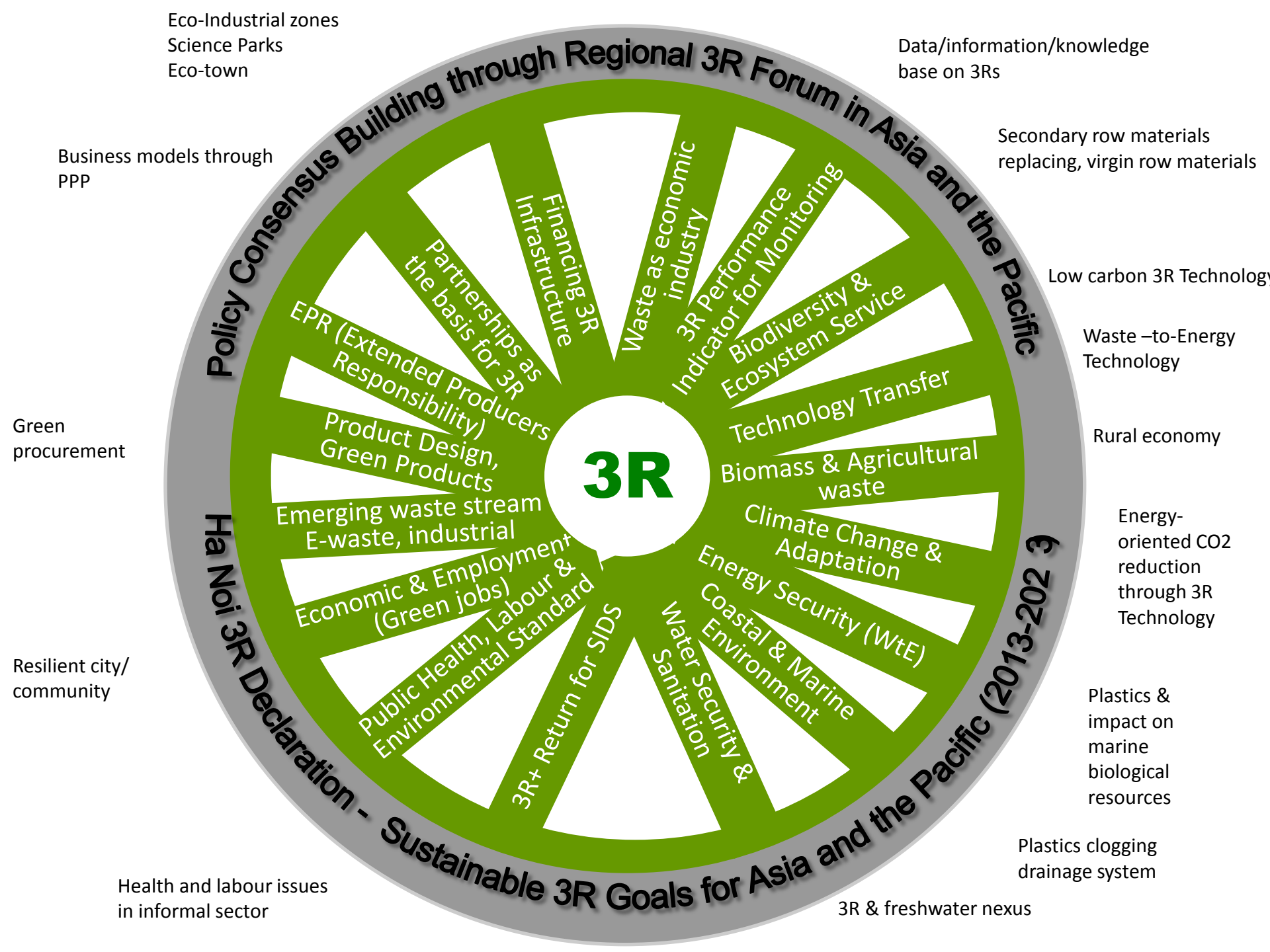
# Ha Noi 3R Declaration
# - Sustainable 3R Goals for Asia and the Pacific for 2013 - 2023

**Adopted at the Fourth Regional 3R Forum in Asia, 18 -20 March 2013, Ha Noi, Viet Nam**
**(more than 300 participants from 30 Asia-Pacific countries)**


- provides an important basis and framework for Asia-Pacific countries to voluntarily develop and implement 3R policies and programs, including monitoring mechanisms, towards transitioning to a resource efficient and zero waste society.

**Consisting of 33 goals under the following areas:**

I. 3R Goals in Municipal/Urban areas (4 Goals)
II. 3R Goals in Industrial Areas (5 Goals)
III. 3R Goals in Rural/Biomass Areas (2 Goals)
IV. 3R Goals for New and Emerging Wastes (5 Goals)
V. 3R Goals for Cross-cutting Issues (17 Goals)


Eco-Industrial zones
Science Parks
Eco-town
Data/information/knowledge base on 3Rs
Business models through PPP
Secondary row materials replacing, virgin row materials
Low carbon 3R Technology
Waste –to-Energy Technology
Green procurement
Rural economy
Energy-oriented CO2 reduction through 3R Technology
Resilient city/ community
Plastics & impact on marine biological resources
Plastics clogging drainage system
Health and labour issues in informal sector
3R & freshwater nexus
Policy Consensus Building through Regional 3R Forum in Asia and the Pacific
Ha Noi 3R Declaration - Sustainable 3R Goals for Asia and the Pacific (2013-202
3R
Financing 3R Infrastructure
Waste as economic industry
3R Performance Indicator for Monitoring
Biodiversity & Ecosystem Service
Technology Transfer
Biomass & Agricultural waste
Climate Change & Adaptation
Energy Security (WtE)
Coastal & Marine Environment
Water Security & Sanitation
3R+ Return for SIDS
Public Health, Labour & Environmental Standard
Economic & Employment (Green jobs)
Emerging waste stream E-waste, industrial
Product Design, Green Products
EPR (Extended Producers Responsibility)
Partnerships as the basis for 3R

# Key messages from 4th Regional 3R Forum in Asia-Pacific

- **Sustainable resource use will be instrumental for Asia to ensure socio-economic development in a world in which resources are more constrained and the absorptive capacity of ecosystems is decreasing rapidly**

- **The region is faced with a number of critical challenges when it comes to integration of resource efficiency in overall policy, planning, and development.**

- **Many countries have become net importers of raw materials (fossil fuel, metals, timber, and other natural resources), the 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.**

- **resource-efficient economic behaviour 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.**

- **Change will not occur spontaneously but will require well designed policies**

- **3Rs and resource efficiency measures provide employment and green job opportunities**

- **resource and waste management challenges of the twenty-first century will be comprehensively addressed by 3R policy initiatives and policy measures to achieve an inclusive and green economic development of Asia and the Pacific.**

- **Urged special attention to SIDS issues with 3R + "Return" due to limited recycling industries and infrastructure and limited scale of markets**

Source: Hanoi 3R Forum, 18-20 Mar 2013, Viet Nam

# 5th Regional 3R Forum in Asia and the Pacific,

## 25-27 Feb 2014, Surabaya, Indonesia


- Co-organized by Government of Indonesia, Ministry of the Environment of Japan (MoEJ), and the United Nations Centre for Regional Development (UNCRD)

- 500 participants from 33 Asia-Pacific countries; more than 23 private sectors; 39 cities and local governments; more than 20 international and UN organizations; more than 10 research and scientific institutions; 13 SIDS (Small Island Developing States).

***called for multilayer partnerships and collaboration within and between communities, businesses, industries, all levels of government, scientific and research institutions, international organizations, development banks, academia and the United Nations system for moving towards a resource efficient and sound material cycle based society that will require considerable and sustainable investment and resource mobilization, including technological interventions, institutional capacity-building, and development of 3R infrastructures, programmes and projects such as - eco-industrial zones, science parks, eco-cities, waste recovery facilities, waste-to-energy schemes, greening small and medium enterprise (SME) operations, green products and eco-labelling schemes, biomass to composts and energy in rural areas, etc.,***

# Key Messages and Recommendations of 5th Regional 3R Forum in Asia-Pacific, 25-27 Feb 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;**

⇒**One of the critical challenge is city level policy that mostly focus on end-of-pipe solutions rather than waste prevention and minimization;**

⇒**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;**

⇒**Through the adoption of the *Surabaya 3R Declaration*, Asia-Pacific countries recognized the role of multilayer partnerships and cooperation for advancement and implementation of 3Rs in the region;**

⇒**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,**

Source: Surabaya 3R Forum, 25-27 Feb 2014, Indonesia

# 5th Regional 3R Forum in Asia-Pacific, 25-27 Feb 2014 – Specific Recommendations for Pacific SIDS

⇒strengthen regional capacity for improved waste management including the regional cooperative framework and partnership for 3R (+Return) among a variety of stakeholders.

⇒ 3R training programs on landfill management, development of a regional capacity database, strengthen existing Container Deposit Legislation (CDL) programs targeting PET, aluminium, glass, and used lead acid batteries (ULABs), etc. with an objective to create local jobs and local incomes, and reduce pressure on landfill space.

⇒3Rs (+Return) principles targeting second hand cars / end-of-life vehicles, e-wastes, used oil, etc. which would ultimately return to original manufacturers

⇒expansion and fast-tracking of the CDL system at the national level, establishment of a regional information and regional recycling platform and improved collaboration with Asian markets for recyclables, including establishment of a network of Pacific island recyclers and developing long-term partnerships with Asian importers and recyclers.

⇒promote science based policy making to address problems of plastic wastes which is a major pollution issue in Pacific coastal and marine environments.

⇒waste segregation at source, and promotion of the eco-bag concept to reduce the national use of plastic bags

⇒promote PPP programs to encourage market vendors to segregate/source separate organic waste with an objective to reduce landfill requirement and increase composting; promote IPLA objectives

⇒integration of 3R in regional programs dealing with climate change, disaster management, biodiversity management, including formal education

Source: Surabaya 3R Forum, 25-27 Feb 2014, Indonesia

# Rio+20 Outcome – The Future We Want

In the "Future We Want", the States call for:

- ***Increasing resource efficiency and reduction of waste*** to achieve green economy in the context of sustainable development and poverty eradication to enhance the ability to manage natural resources sustainably and with lower negative environmental impacts
- ***development and implementation of policies for resource efficiency*** and environmentally sound waste management, including commitment to further ***3Rs*** as well as to increase energy recovery from waste with a view to managing the majority of global waste in an environmentally sound manner
- development and enforcement of comprehensive ***national and local waste management policies, strategies, laws and regulations.***
- continued, 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 for ***waste prevention***


# Shared issues & challenges that have implication on both resources management & waste management

**Facts and figures**

✓Today > 50% of the world population already live in cities & urban areas; expected to be > 70% by 2050, with almost all the growth occurring in the developing world.

✓ 95 per cent of urban expansion in the next four decades will take place in developing world, with Asia and African alone contributing > 86%.

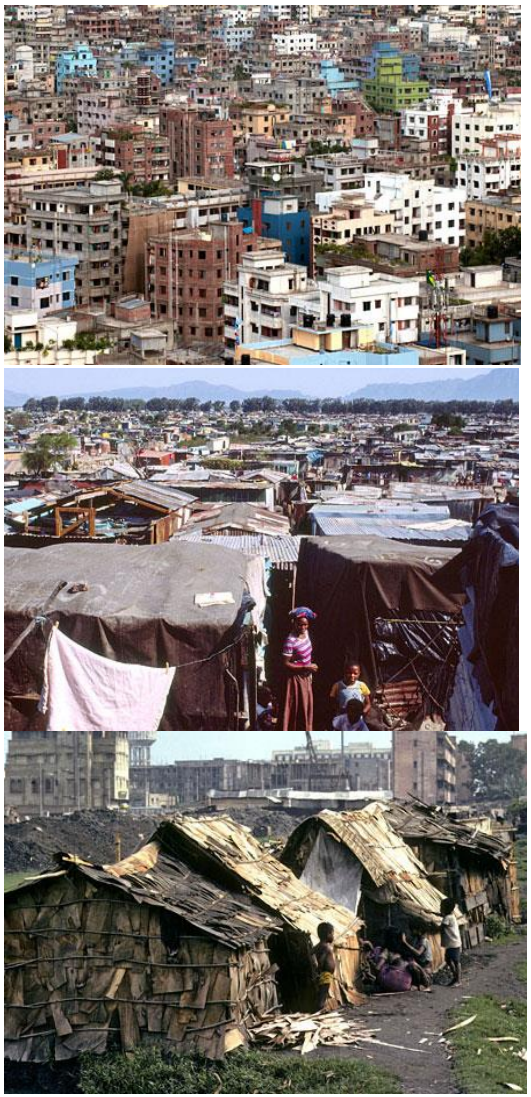
✓Over next four decades, Africa's urban population will soar from 414 million to over 1.2 billion & Asia from 1.9 billion to 3.3 billion

✓Over the next four decades, India will add another 497 million to its urban population, China – 341 million, Nigeria – 200 million, the US – 103 million, and Indonesia – 92 million

✓828 million people live in slums today and the number keeps rising.

✓ The world's cities occupy just 2 per cent of the Earth's land, but account for 60-80 per cent of energy consumption, 75 per cent of carbon emissions, approximately 70% of global GDP, & consume 70% of all resources.

✓ Rapid urbanization is exerting pressure on fresh water supplies, sewage, the living environment, and public health.





Source: UN DESA, 2011 & United Nations, 2012
http://www.un.org/en/sustainablefuture/cities.shtml#overview

# Major Policy Gaps

•Prevailing economic system does not provide adequate incentives for resource conservation and efficient resource allocation / 3Rs & resource efficiency are not part of macro economic policies as waste is conventionally thought of having no "economic" value.

•Prevailing production and consumption patterns do not effectively integrate resource efficiency, contributing to growing quantities of wastes that must be managed for final disposal; SMEs are major concern.

•As Asian industrial economies continue to grow, the region will generate more toxic chemicals & hazardous wastes, mostly coming from industrial, agriculture, and manufacturing processes, but current waste management policies are not linked with bio-diversity conservation/protection of ecological assets – fresh waster resources, coastal & marine ecosystem, etc.

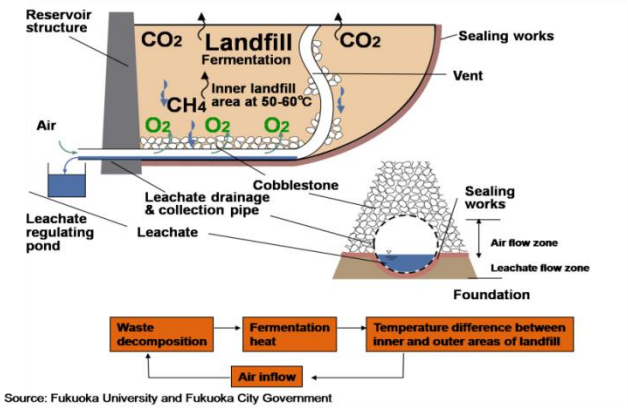

Source: ADB (2004)

# Limitations & Challenges faced by SIDS..

- small, remote and distributed over larger areas, prone to natural disasters and climate change
- fragile ecosystem vulnerable to emerging waste streams such as plastics
- limited land availability for waste disposal
- limited technical and financial capacity to manage emerging waste streams such as plastics, e-waste, oil, end-of-life vehicles, and health-care waste.
- Lack of recycling facilities

# Waste disposal is expensive – financially and in lost resources - Can the SIDS afford?

- Requires substantial inputs of labour (for collection/processing)
- Substantial materials input (construction of facilities for wastewater treatment, land-filling, incineration)
- Energy input (collection, treatment, incineration)
- Land resources (land-filling, incineration, treatment facilities, scarcity of lands in SIDS)
- Pacific SIDS' MSW stream is composed of 60% organic waste, with a further 35% of waste being potentially recyclable (Surabaya 3R Forum, 2014).



Source: Fukuoka University and Fukuoka City Government

No landfills are 100% perfect in terms of preventing GHG emission and leachate control (landfills are major source of methane (CH4), a powerful GHG, and land costs are getting very high….

In advancing 3Rs/Resource Efficiency, what should be the priority for government authorities?

**UPSTREAM MEASURES**

Source reduction, Extended use, re-use

(Product policy towards resource efficiency)

versus

**DOWNSTREAM FOCUS**

An expanded recycling industry

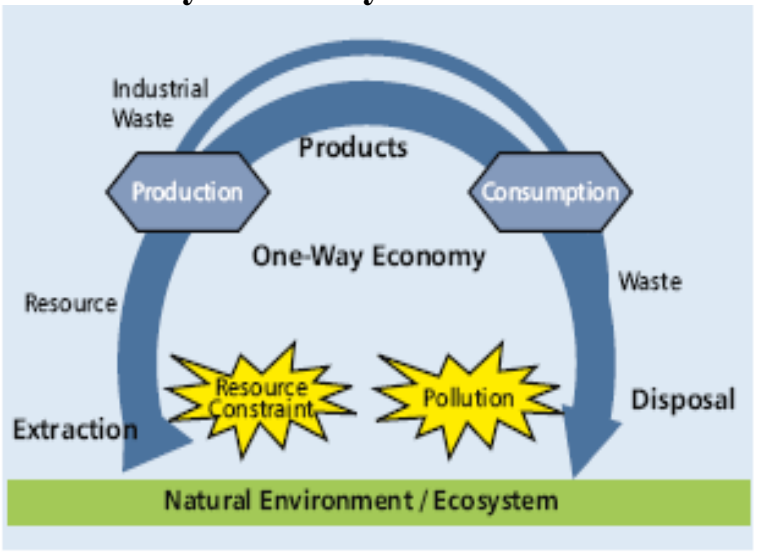
(Resource intensive and hazardous production of expanding markets)

***=> Most government policies and programs tend to focus on conventional waste management solutions such as sanitary land filling or incineration – mainly downstream disposal, which is expensive, while failing to pursue upstream measures to reduce the actual waste load.***

***=> Hanoi 3R Declaration 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 market in SIDS, especially in the Pacific Region.***

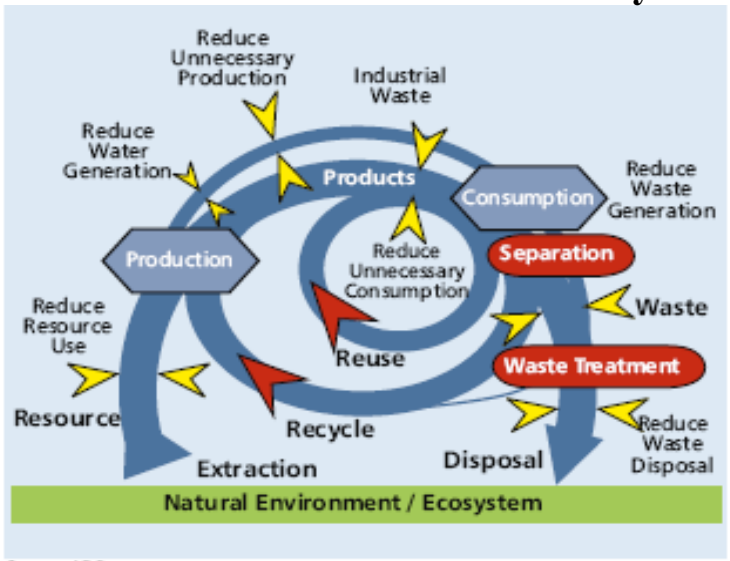
**Given that many Asia-Pacific countries have become net importer of raw materials, the region needs to gradually more towards a more resource efficient society …..**

## 1. One-way Economy



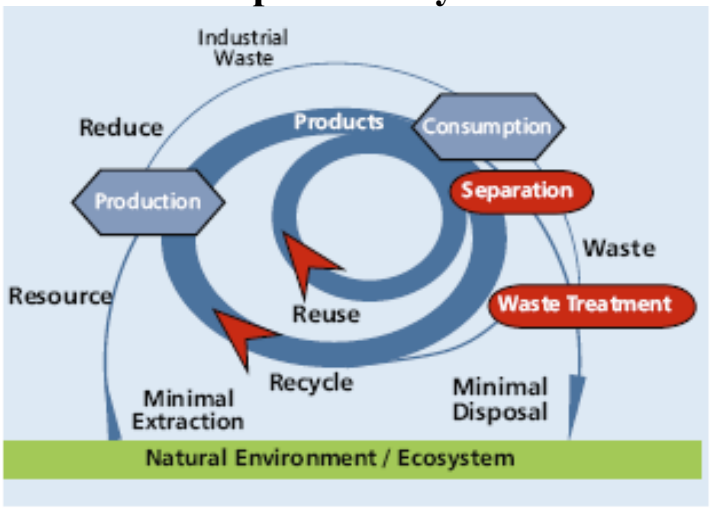

Source: ADB.

## 2. More resource efficient economy




Source: ADB.

## 3. Closed Loop Economy




Source: ADB.

Resource efficiency => minimize per unit product or services

- Raw material input ⇩
- Water input ⇩
- Energy input ⇩
- Emission/GHG, pollution, waste generation ⇩

# International Partnership for Expanding Waste Management Services of Local Authorities (IPLA) - A Rio+20 Partnership

IPLA

UNCRD
UN-HABITAT
Griffith UNIVERSITY
SACEP
SPREP PROE
SWEEPNET
uaesp programabasuracero
REGIONAL ENVIRONMENTAL CENTER
abrelpe
ISWA
iwwg
Lawma

# About IPLA

- Launched at the nineteenth session of the United Nations Commission on Sustainable Development (CSD-19) held in New York in May 2011, and subsequently became a Rio+20 partnership in June 2012.

- Aims to foster partnerships which address various needs of **local authorities (LAs)** in achieving sustainable waste management.

- Serve as a **dynamic knowledge platform** and a **decentralized network** among LAs, the private sector, NGOs, academic & research institutions, international organizations, UN agencies, etc.

- Support LAs in moving towards **zero waste** and **resource efficient** societies, ultimately achieving **sustainable and resilient cities**.

# Four key principles behind IPLA => Partnership is key to expand waste management services of local authorities that lack resources, institutional capacity, and technological know-how…

- **Partnerships** offer alternatives in which governments and private companies assume co-responsibility and co-ownership for the delivery of solid waste management services. Waste disposal is expensive – financially and in lost resources (substantial inputs of labour, material, energy, land resources for land filling, etc.)

- **Partnerships** combine the advantages of the private sector (dynamism, access to financial resources and latest technologies, managerial efficiency, and entrepreneurial spirit, etc.) with social concerns and responsibility of the public sector (public health and better life, environmental awareness, local knowledge and job creation, etc.).

- **Partnerships** (PPP) are indispensable for creating and financing adaptation measures towards resilient cities which in turn are more attractive for private investments.

- **Partnerships** provide win-win solutions both for the public utilities and private sector—if duly supported by appropriate policy frameworks. Such partnerships could lead to savings in municipal budgets where waste management usually consumes a large portion. The private sector, on the other hand, may use this opportunity to convert waste into environmentally friendly products and energy that could also serve as income generating opportunities.

***Shifting the roles of municipalities from being a 'service provider' to 'facilitator of service', by focusing its activity on planning and management, while a private company takes up the actual day-to-day operation.***

# The Consultative Process that led to creation IPLA

**2009**

**CSD Intersessional Event - Inaugural Regional 3R Forum in Asia, Nov 2009, Tokyo - contributed towards world wide recognition of 3Rs as the basis for sustainable waste management through CSD**

**2010**

CSD Intersessional Event - International Consultative Meeting on Expanding Waste Management Services in Developing Countries, 18-19 March 2010, Tokyo

CSD 18 Side Event: Toward Global Sound Material Cycle Society, May 2010, New York

**2011**

CSD Intersessional Event - International Conference on Building Partnerships for Moving Towards Zero Waste, 16-18 Feb 2011, Tokyo

Unanimously recommended launching of the International Partnership for Expanding Waste Management Services of Local Authorities (IPLA) at CSD-19 on 12 May 2011, New York

**2012**

Registered as Rio+20 Partnership, June 2012, Rio de Janeiro, Brazil

**Highlights from CSD-18 Chair Summary**:
- Need to move towards zero waste economy;
- 3Rs as the basis for sustainable waste Management;
- Called for international cooperation & Partnerships; and
- Called for special national and International action on emerging new waste streams such as e-waste.

# Global, Regional, and Sub-Regional Secretariats

IPLA

UNCRD

International Coordinating Secretariat

Global Secretariat

UN-HABITAT

Regional Secretariat for Africa, Asia and Latin America

SACEP

Sub-Regional Secretariat for South Asia

SPREP PROE

Sub-Regional Secretariat for the Pacific SIDS

abrelpe

NATIONAL MEMBER OF ISWA International Solid Waste Association

Sub-Regional Secretariat for Southern Latin America

uaesp programabasuracero

Sub-Regional Secretariat for Northern Latin America

Griffith UNIVERSITY

Sub-Regional Secretariat for the region covering Australia and New Zealand

SWEEPNET

Sub-Regional Secretariat for Mashreq and Maghreb Countries

REGIONAL ENVIRONMENTAL CENTER

Sub-Regional Secretariat for Central and Eastern Europe

USC

Sub-Regional Secretariat for the Caribbean SIDS

ICBET

Sub-Regional Secretariat for Russia and EurAsEC countries

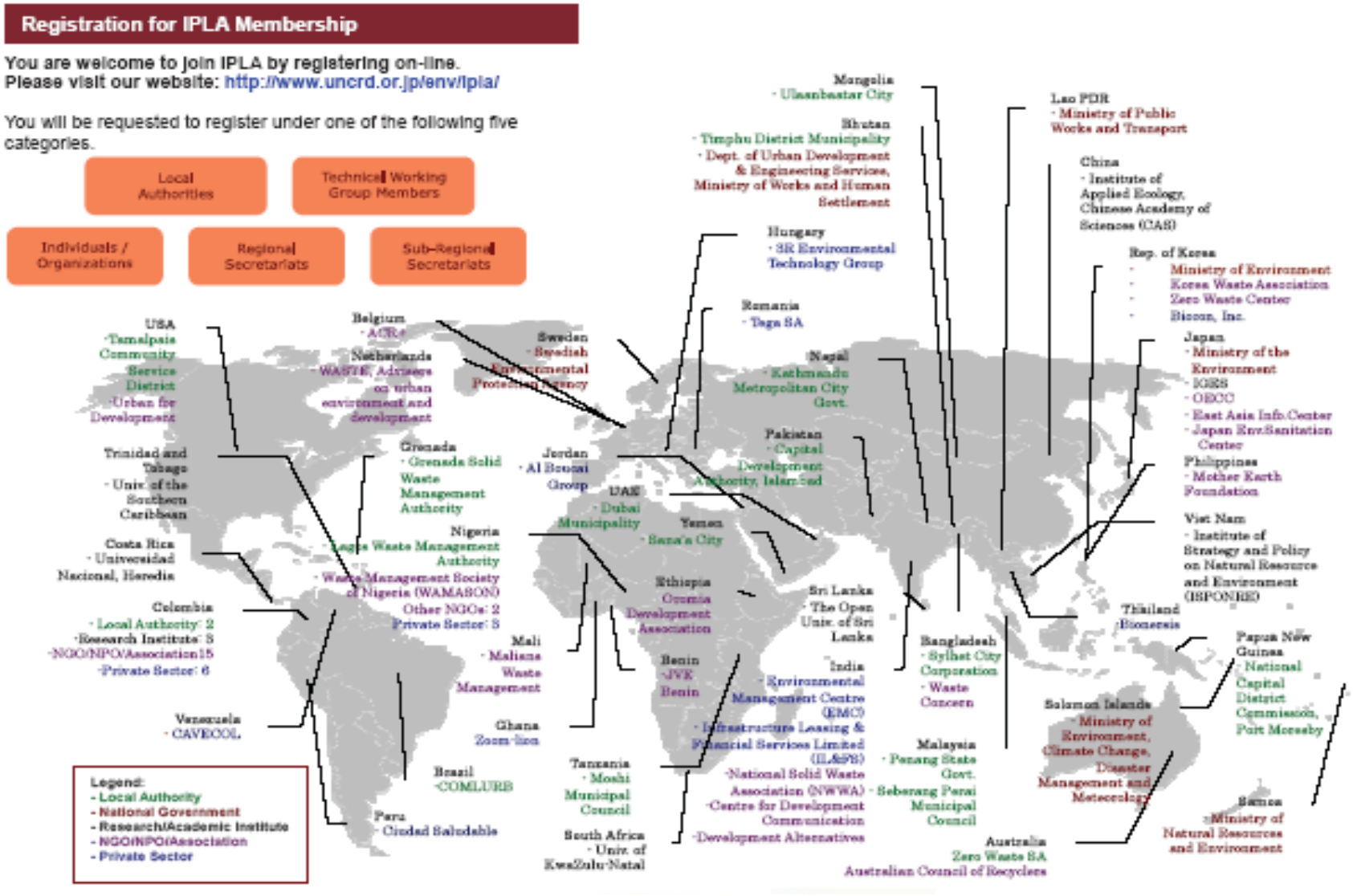
iwwg international waste working group

Sub-Regional Secretariat for Southern Africa

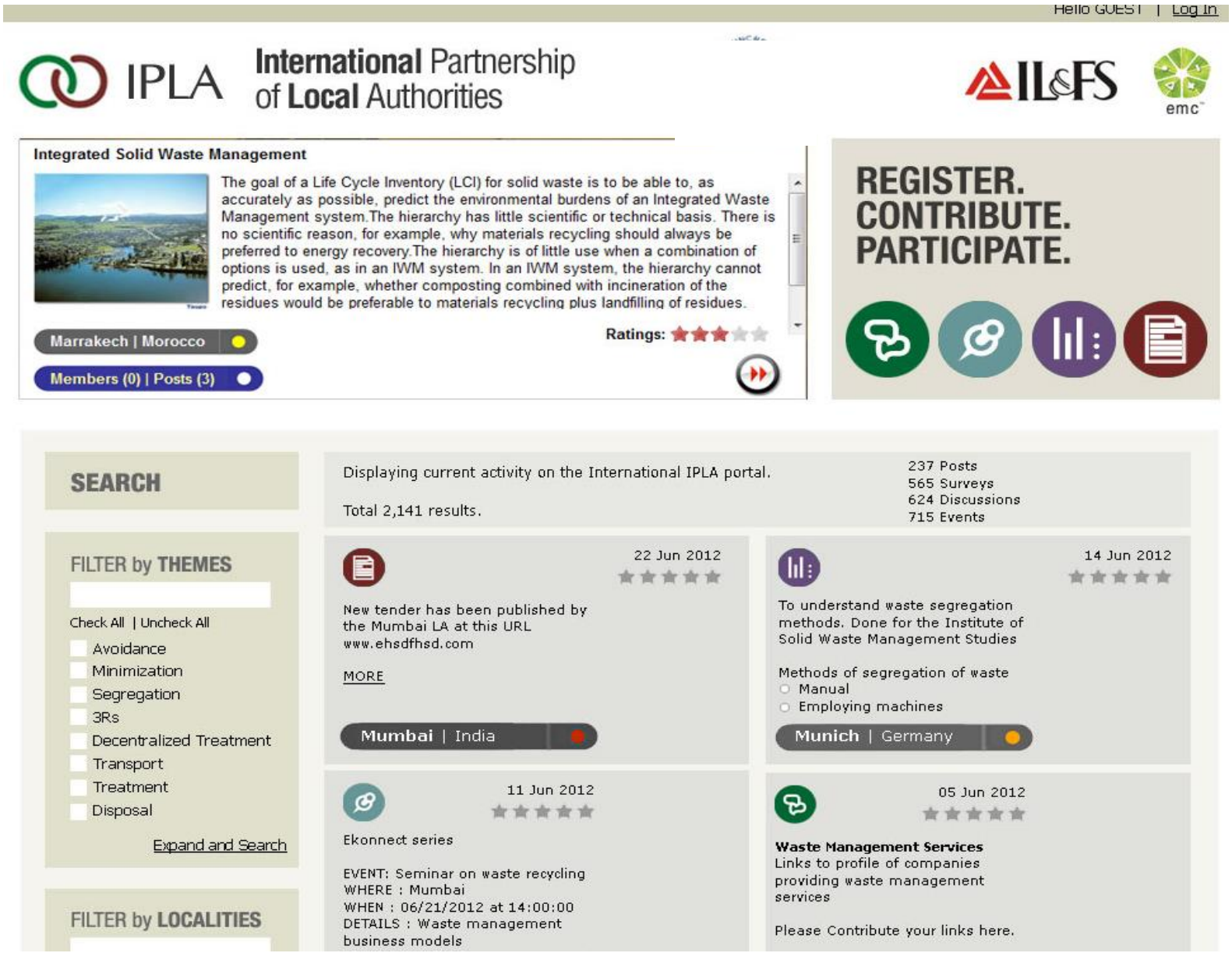
Lawma Lawma Lawma

Sub-Regional Secretariat for Western Africa

# Official partners around the world
## (Around 248 members from 70 countries - as of June 2014)



# IPLA Portal: www.iplaportal.org



# IPLA Membership

- Primary beneficiaries are LAs, mainly (but not limited to) those in emerging and developing economies.
- to all interested entities that align with its mission of expanding waste management-related services of LAs.
  e.g., LAs, governments, the private sector and industry, NGOs/CBOs, research institutions, international organizations, UN agencies, among others.
- IPLA membership is fully free of charge or any fees

Register with IPLA : www.uncrd.or.jp/env/ipla/index_form.htm

For any inquiry about IPLA, please email: *ipla@uncrd.or.jp*