Advancing 3R and resource efficient society in the context of the 2030 Agenda for Sustainable Development ~ Role of Regional 3R Forum in Asia and the Pacific

UN DESA-UNCRD side event
3R as the Basis for Moving Towards Zero Plastic Waste in Coastal and Marine Environment
at
The Ocean Conference
5-9 June 2017
The United Nations Headquarters, New York

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UNCRD

United Nations Centre for Regional Development

2030 Agenda for Sustainable Development

New Urban Agenda 2016

Paris Agreement 2015

COP21·CMP11
PARIS2015
UN CLIMATE CHANGE CONFERENCE

Nairobi Mandate 2016

Addis Ababa Action Agenda 2015

THIRD INTERNATIONAL CONFERENCE
FINANCING FOR DEVELOPMENT
13-16 JULY 2015 · ADDIS ABABA · ETHIOPIA
TIME FOR GLOBAL ACTION

A prevalent policy dilemma - should we prevent waste at first hand or we solely rely on managing them ? 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)

Often government policies and programs tend to focus on conventional waste management solutions, mainly relying on downstream disposal, land filling or incineration, which is expensive, while failing to pursue upstream measures to reduce the actual waste generation..

History of Regional 3R Forum in Asia and the Pacific

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 Island Countries join 3R Forum

3R as an Economic Industry

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/2013

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

6th Regional 3R Forum in Asia-Pacific Maldives/2015

7th Regional 3R Forum in Asia-Pacific Australia/2016

The 2030 Agenda for Sustainable Development / SDGs

Tokyo 3R Statement

Singapore Recommendations

Surabaya 3R Declaration

Declaration on Circular Economy

Ha Noi 3R Declaration (2013-2023)

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

Private Resorts Declaration on 3Rs (99 private tourist resorts of Maldives signed)

RIO+20 United Nations Conference on Sustainable Development

2030 Agenda for Sustainable Development / SDGs

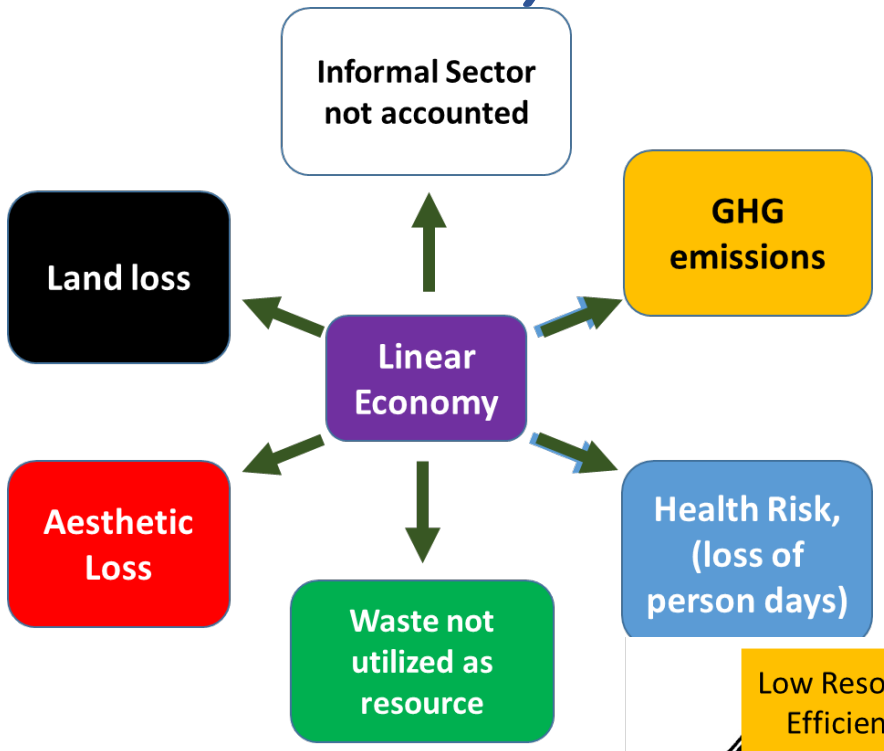
3R for Green Economy

3Rs for Sustainable Cities and Human Settelment (Healthy & Safe)

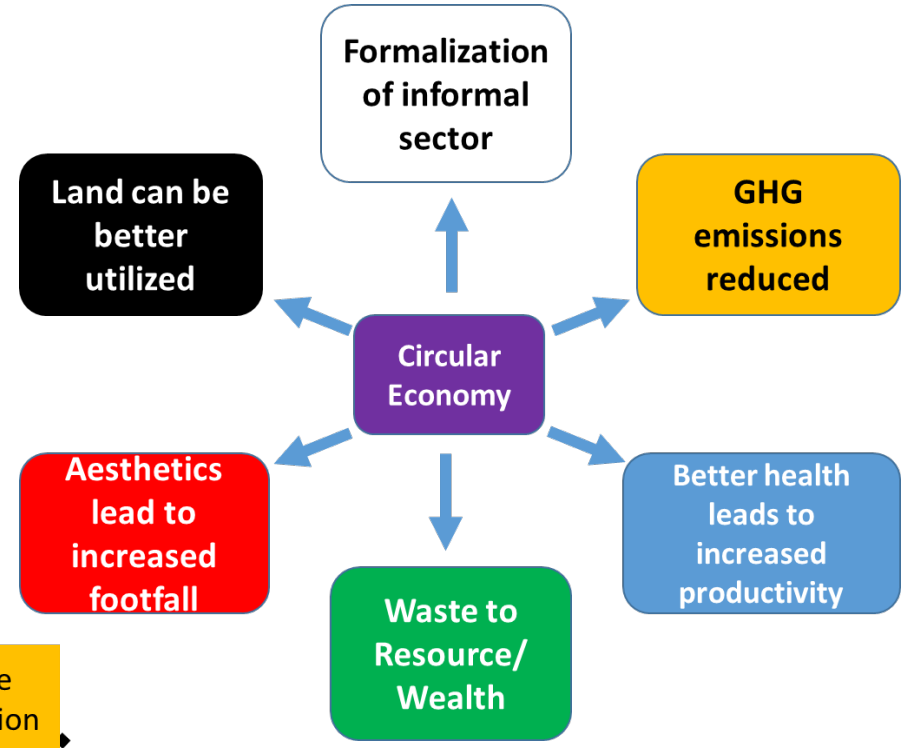
3Rs for Costal & Marine Ecosystem

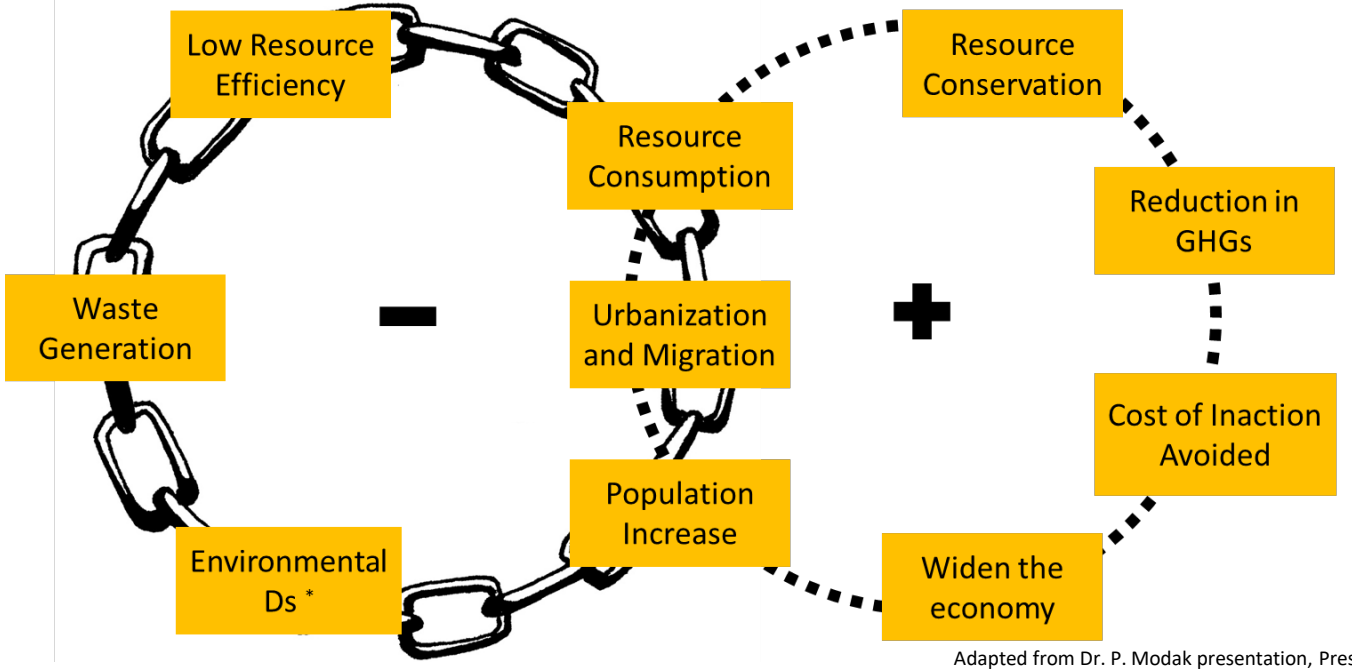
Needs for Innovative Partnerships

Policy focus of Regional 3R Forum in Asia-Pacific



Linear to Circular economy





Moving from negative loop to positive loop

=> ***Important impact:***
Waste management is being increasingly addressed in resource domain

Source: Co-Chairs' Summary of Sixth Regional 3R Forum 2015

Adapted from Dr. P. Modak presentation, Presented at Sixth Regional 3R Forum in Asia and the Pacific 2015

Plastic waste problems

- *Worldwide, 322 million metric tons of plastic waste was produced in 2015 and the figure keeps growing; by 2050, it could be four times higher;*
- *As a result, a huge amount of it ends up polluting the Earth;*
- *Up to 13 million tons of plastic waste ends up in the ocean each year; by 2050, there could be more plastic in there than fish.*

Source of Plastic waste

Land-based – blown, swept or washed out to sea

- Littering, dumping and poor waste management practices – intentional or unintentional;
- Storm water discharges – street litter (cigarette butts and filters), medical items (syringes), food packaging, beverage containers tat may have been washed down storm drains;
- Extreme natural events – hurricanes, tornadoes, tsunamis, land/mudslides;
- Waste dumps on the coast or inland; and
- Riverine waste transport along rivers and other inland waterways.

Ocean-based – dumped, swept or blown off vessels and stationary platforms

- Fishing vessels – lost fishing gear from commercial fishing vessels, recreational boats and shore fishing activities;
- Stationary platforms – lost items from offshore oil and gas platforms;
- Cargo ships and other vessels – cargo lost overboard
- Fish farming installations; and
- Military fleets and research vessels.

Source: http://www.maltachamber.org.mt/en/the-european-commission-s-circular-economy-the-strategy-for-plastics

Source: marinedebris.noaa.gov and UNEP website

Source: Japan times, 18-May-2017

Plastics issue – vast implications on coastal and marine environment

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© Brehen/UNEP/Still Pictures

Source: http://surfingindia.net/

© Still Pictures

- Plastics carry hazardous chemicals in marine environment (e.g., PCBs)
- More than 200 species of animals are known to have ingested plastic debris, including birds, fish, turtles and marine mammals.
- Transfer of chemicals from ingested plastics to biological tissue has been confirmed (bio-magnification).
- Micro-plastics (size < 5 mm) in coastal and marine environments is a critical problem, including bio-accumulation of hydrophobic persistent organic pollutants (POPs) like PCBs, DDTs, HCHs and others from the plastics through ingestion or food-chain (fist to fish and fish to people),

(Source: Prof. Hideshige Takada and 6th Regional 3R Forum in AP, 2015)

Source of photos: UNEP,
http://www.unep.org/regionalseas/marinelitter/publications/gallery/default.asp

Plastics waste and resilience nexus…

Unclogging Jakarta's Waterways

- Estimated population of over 10 million people:
  - 20% of city's daily waste ends up in local rivers and canals

- City administration is dredging its 17 rivers and canals for the first time since 1970s due to waterways being 70% blocked, a central contributor to the city's chronic flooding problems

(Source: The New York Times, October 2016)

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

(Adapted at 4th Regional 3R Forum, 18-20 March 2013, Ha Noi, Viet Nam)

- 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)

Source:Ha Noi 3R Declaration (2013-2023)

Ha Noi 3R Declaration
-Sustainable 3R Goals for Asia and the Pacific for 2013-2023-
(Adapted at 4th Regional 3R Forum, 18-20 March 2013, Ha Noi, Viet Nam)

Goal no. 12: Strengthen regional, national and local efforts to address the issue of waste, in particular plastics in the marine and coastal environment {3R Goals for New and Emerging Wastes}

Monitoring indicators:

- Number of coastal cities with complete ban on use of plastics packaging materials.
- Issues of plastic waste considered as part of integrated coastal zone management (ICZM) plans.
- National policies concerning plastic waste developed or strengthened , taking into consideration the impacts of plastic waste in marine and coastal environment.
- Regional initiatives initiated/ strengthened to address the issue of plastic waste in the marine and coastal environment.

Goal no. 25: Protect public health and ecosystem, including freshwater and marine resources by eliminating illegal activities of open dumping, including dumping into the oceans, and controlling open burning in both urban and rural areas {3R Goals for Cross-cutting areas}

Monitoring indicators:

- Number of cities with open dumping/ open burning.
- Number of major rivers with open dumping and direct discharge of untreated domestic waste and industrial effluents.
- Biological Oxygen Demand of major rivers, lakes, etc.

Source:Ha Noi 3R Declaration (2013-2023)

Source:https://www.theguardian.com/environment/2016/jul/14/scientists-call-for-better-plastics-design-to-protect-marine-life

Malé 3R Declaration

(signed by 99 tourist resorts at 6th Regional 3R Forum, 16-19 August 2015, in Malé, Maldives)

Important initiatives and steps:

- **discourage** use of any form of plastics in the resorts as a priority; explore ways to utilize end-of-life plastics as a valuable resource and as an integral part of the waste reduction strategy contributing to circular economy;

- **consider investments** for installing state-of-the-art sewage collection and treatment facilities to protect the coastal and marine environment; and

- **take every preventive measure** to protect coral reefs and other ecological assets from physical damage and pollution from toxic chemicals and hazardous substances.

*Miles of litter: Thilafushi is an artificial island in the Maldives where about 400 tonnes of rubbish is dumped every day - "**rubbish island**"*

Source: http://www.dailymail.co.uk/news/article-2774725/Incredible-photos-mountains-plastic-bottles-washed-idyllic-honeymoon-islands-Source:http://www.dailymail.co.uk/news/article-2774725/Incredible-photos-mountains-plastic-bottles-washed-idyllic-honeymoon-islands-Maldives.html

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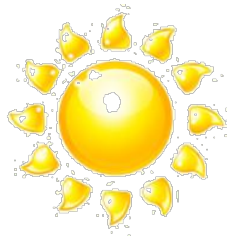
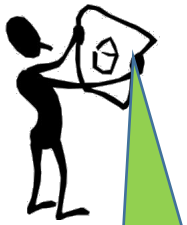
3R AS A ECONOMIC INDUSTRY TOWARDS RESOURCE EFFICIENT & ZERO WASTE SOCIETY

R & D/Engineering



Energy Efficiency



Energy service companies (energy audit, energy efficient system design /equipment manufacturing, specialty engg. services, etc.

Nano tech market : more than US$1 trillion

Green Chemistry & Nano Technology

- cosmetics, baby lotion, computer chips, paints, medical equipments, etc.

Water Efficiency

- Water saving devices
- distribution efficiency
- Zero leakage,
- Waste water treatment,
- Rain water harvesting, etc.

Waste-Water-reuse for urban agriculture practices

- Water purification technologies, waste water treatment (ecological engineering: constructed wetlands for pre-treatment of urban run off water & river water)
- Distributed sewage treatment systems, etc.

Green Buildings

- Engineering, design & construction materials

Bio-economy (high value processing/conversion of biomass)

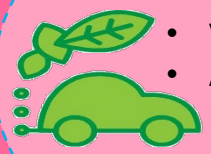
- Bio-products
- Bio-energy
- Bio-Engineering
- Landscape trimming, etc.

Synthetic fibers/oil, bioplastics, materials from fiber by-products, composts, animal feeds, bio-chemical

Resource Recovery/3R

Sustainable Transportation

- ITS, IFS, BRT, Railways, walkways & bicycle ways
- Fuel efficiency measures
- Vehicle I/M
- Alternative fuels,
- PPP for urban transport. etc.



Sustainable Farming Support Companies

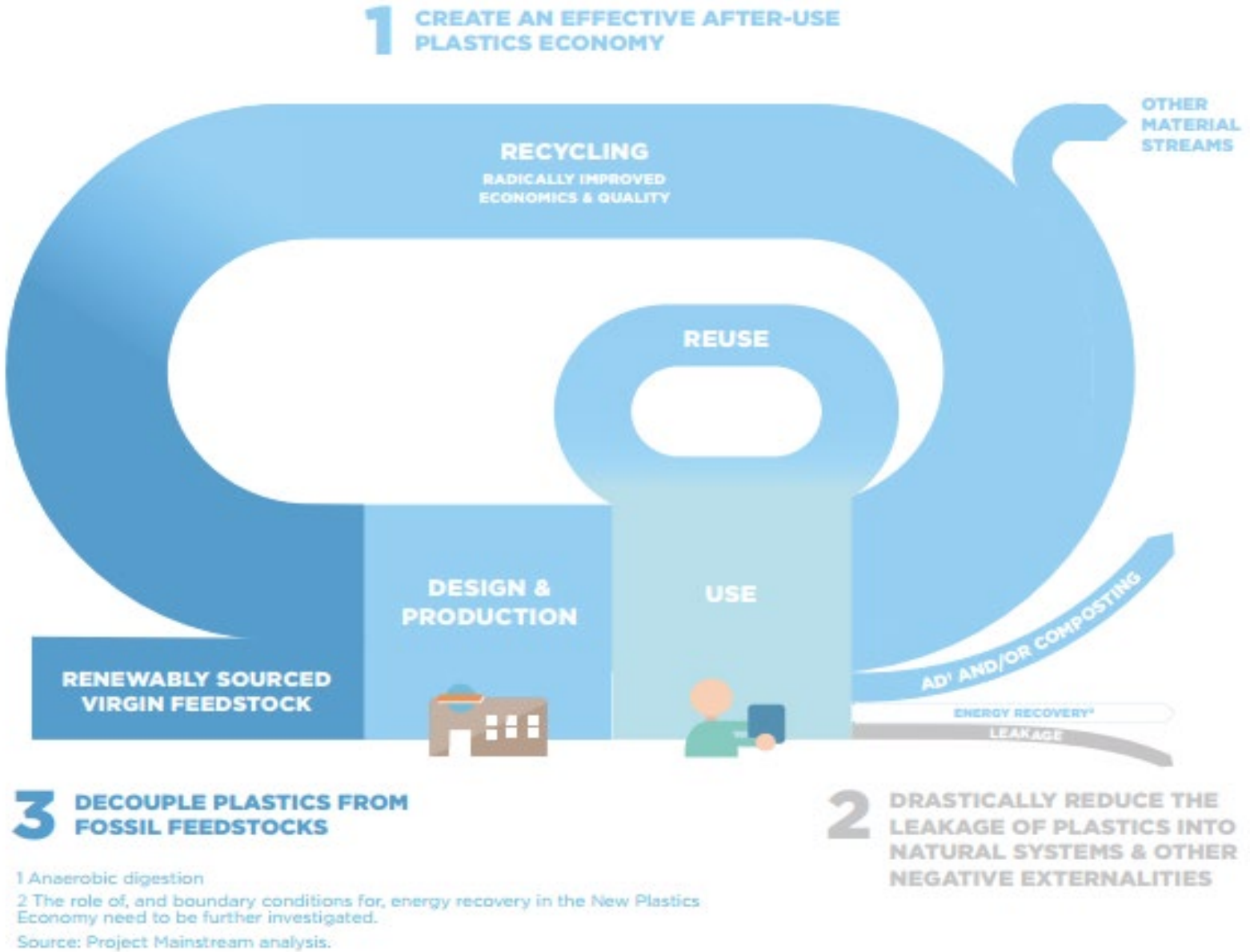
- Efficient water & nutrient management system
- Water & nutrient delivery system
- Biomass energy company
- Energy efficient cultivating, harvesting, hauling equipment
- Compost industry (e.g. Dhaka Community-based Composting System)
- Roof top agriculture (urban greening) for food security

CH4 & fertilizer from animal manure /sewage sludge with anaerobic or aerobic digesters, refused-derived fuel (RDF), etc.

Urban Services and Supplies

Circular Economy: New Plastic Economy proposes a new way of thinking

The New Plastics Economy is underpinned by and aligns with circular economy principles. It sets the ambition to deliver better system-wide economic and environmental outcomes by creating an effective after-use plastics economy (the cornerstone and priority); by drastically reducing the leakage of plastics into natural systems (in particular the ocean); and by decoupling plastics from fossil feedstocks.



Source: The New Plastics Economy: Rethinking the future of plastics by Ellen Macarthur Foundation, 2016 (http://www.ellenmacarthurfoundation.org/publications).

SDG Goal no. 14 "Life below water" -Conserve and sustainably use the oceans, seas and marine resources for sustainable development-

Target 14.1: **By 2025, prevent and significantly reduce marine pollution** of all kinds, in particular from land-based activities, including marine debris and nutrient pollution;

Target 14.2: **By 2020, sustainably manage and protect marine and coastal ecosystems** to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans;

Target 14.3: **Minimize and address the impacts of ocean acidification**, including through enhanced scientific cooperation at all levels; and

Target 14.5: **By 2020, conserve at least 10 percent of coastal and marine areas**, consistent with national and international laws and based on the best available scientific information.

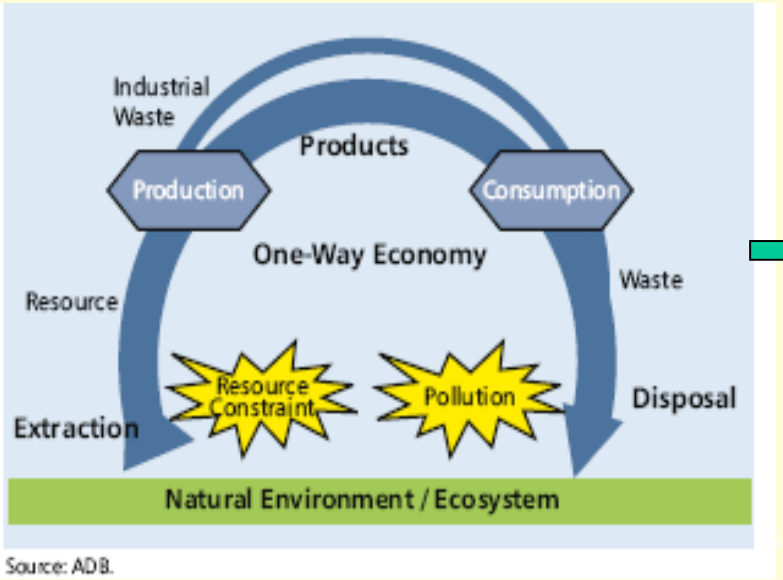
Source:https://www.google.co.jp/search?rlz=1C1CAFB_enJP726JP726&biw=864&bih=544&tbm=isch&sa=1&q=plastic+in+ocean&oq=plastic+in+ocean&gs_l=psy-ab.3...1134.6638.0.6880.0.0.0.0.0.0.0.0..0.0....0...1.1.64.psy-ab..0.0.0.Pe2fjldYsXs#imgrc=_

Source: Adapted from United Nations, 2015

Source:https://www.google.co.jp/search?q=SDG+14+ocean&rlz=1C1CAFB_enJP726JP726&source=lnms&tbm=isch&sa=X&ved=0ahUKEwiloa-BsoLUAhUGLpQKHXuiBhQQ_AUICigB&biw=864&bih=544#imgrc=ZJjgzAoJNb664M:

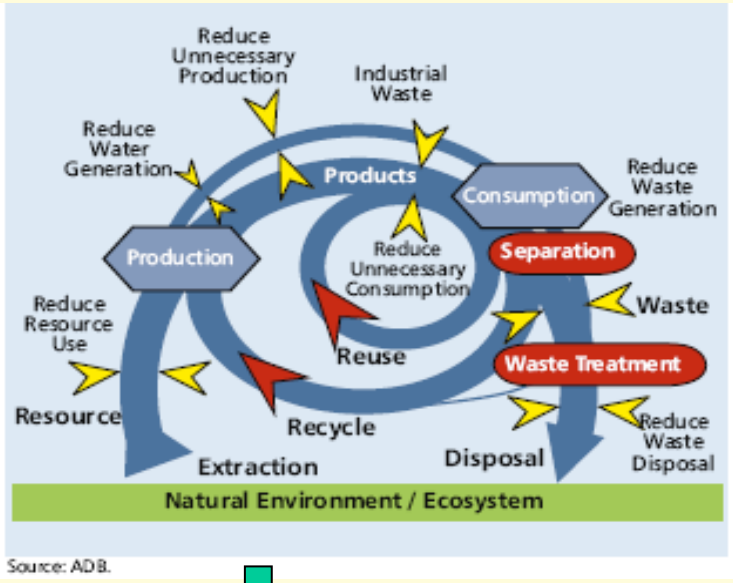
THE WAY FORWARD – moving from linear or one-way --> resource efficient --> closed loop economy..

1. One-way/conventional Economy



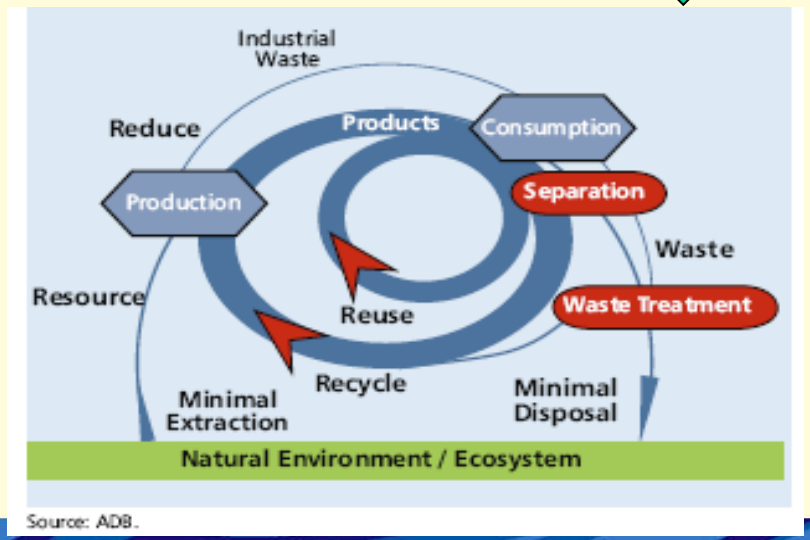
Source: ADB.

2. More resource efficient economy



Source: ADB.

3. Closed Loop Economy



Source: ADB.

1. **one way economy** -> a little effort is made to reduce the amount of materials consumed in production and hence the wastes are produced. Also little effort is made to reuse or recycle those wastes which mainly go for landfill.
2. **greater resource efficiency** -> by reducing consumption and waste of materials, and by reusing and recycling waste/byproducts minimize (per unit of product or services) – quantity of input raw material/energy /water as well as pollution /emission/environmental impact of the residual materials flow that flow to disposal sites.
3. **closed-loop economy** -> nearly all waste/outputs either become inputs to other manufacturing processes or are returned to natural systems as benign emissions rather than as pollutants.

Source: Adapted from ADB, 2011

The Way Forward to deal with the growing issue of plastics...

=> A focus on the circular economy requires a stronger recognition of the *"whole-of-value-chain" approach*, extending the waste management perspective to the whole life cycle of resources..

Resource Mobilization, Coordination and Implementation

Governments
Communities
Cities
NGOs

Academia
Funding Agencies
Private enterprises

Welcome to
8th Regional 3R Forum in Asia and the Pacific

***Theme:* Achieving Clean Water, Clean Land and Clean Air through 3R and Resource Efficiency – A 21st Century Vision for Asia-Pacific Communities**

Venue: *International Convention Centre, Hyderabad, India*
Date: *18-21 December 2017*
Co-organizers: *Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India;*
Ministry of Urban Development (MoUD), Government of India;
Ministry of the Environment, Japan; and
United Nations Centre for Regional Development (UNCRD)