

Plenary Session 2: Circular Economic Utilization of
Plastic Waste – Implications towards SDGs (9th
Regional 3R Forum in Asia & the Pacific, 4-6th March
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Background Presentation 1: Reducing Plastic Wastes
through Circular Economy – Implications towards 12 & 14

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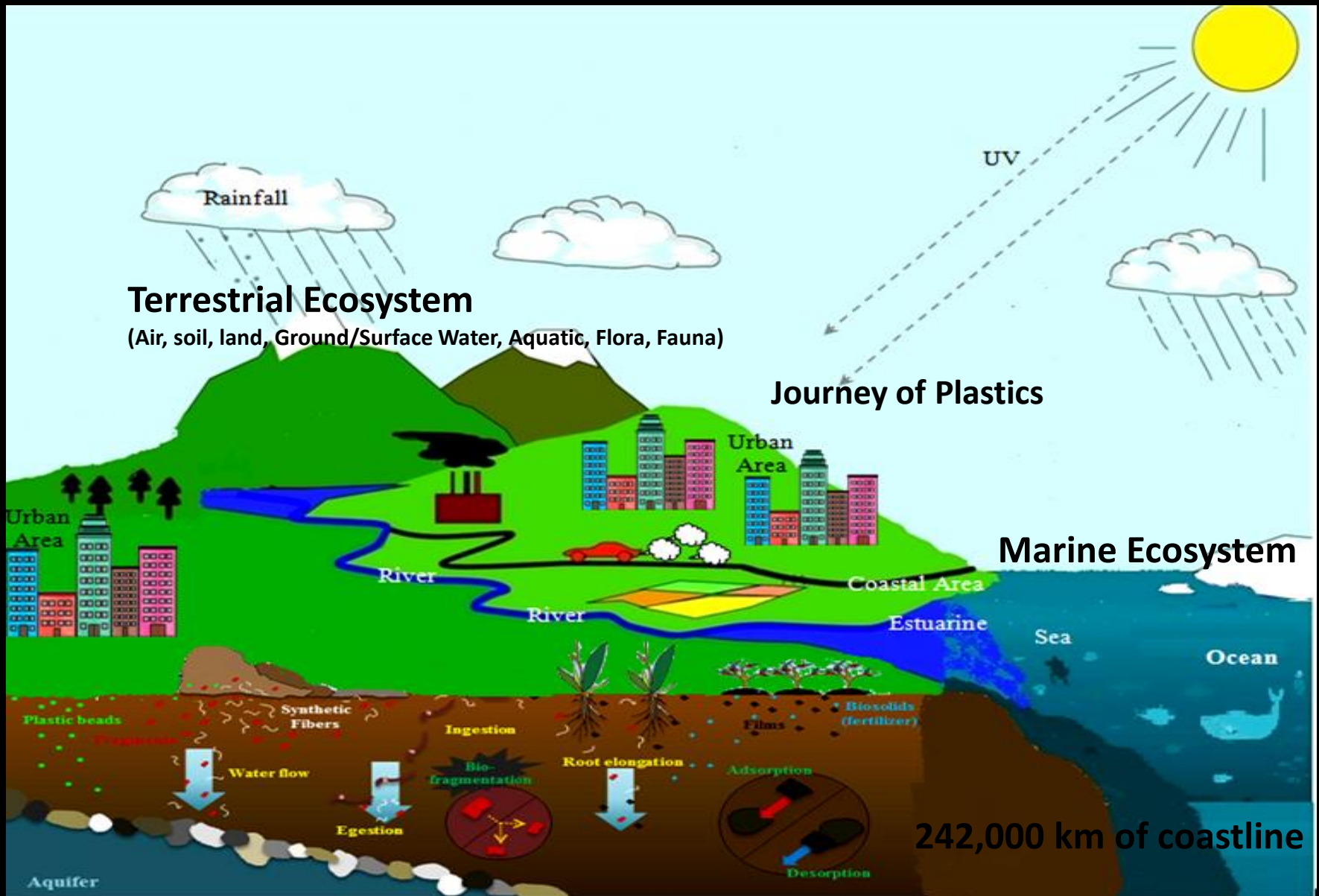
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Thought Provoking ..Asia Pacific ???

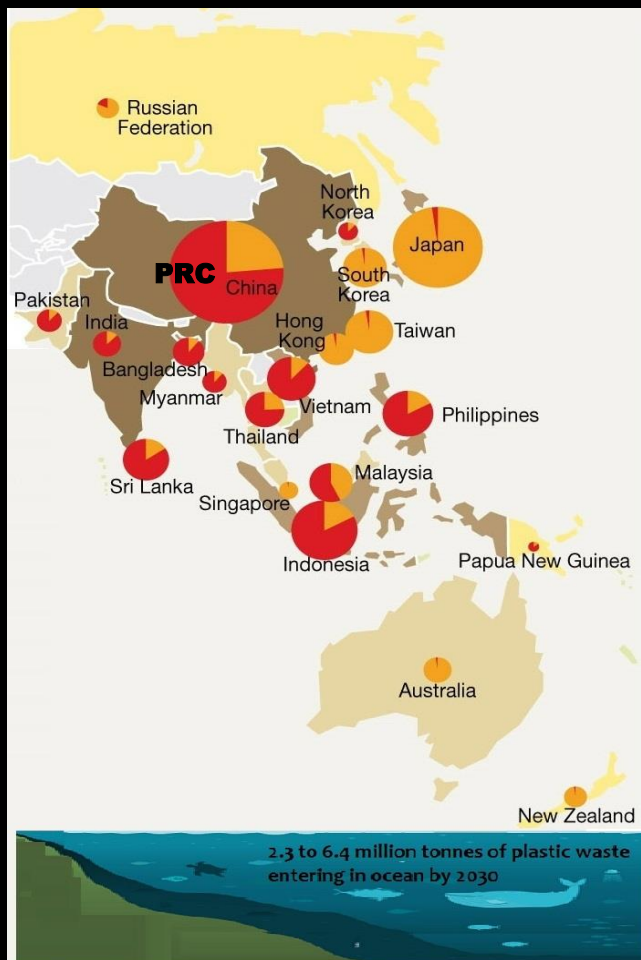


Further Observations ...Asia Pacific ???



Journey of Plastics: Where ? How Much ?

Broad Estimates



Coastal population
 Million people
 Less than 1
 1 to 2
 2 to 10
 10 to 50
 50 to 263

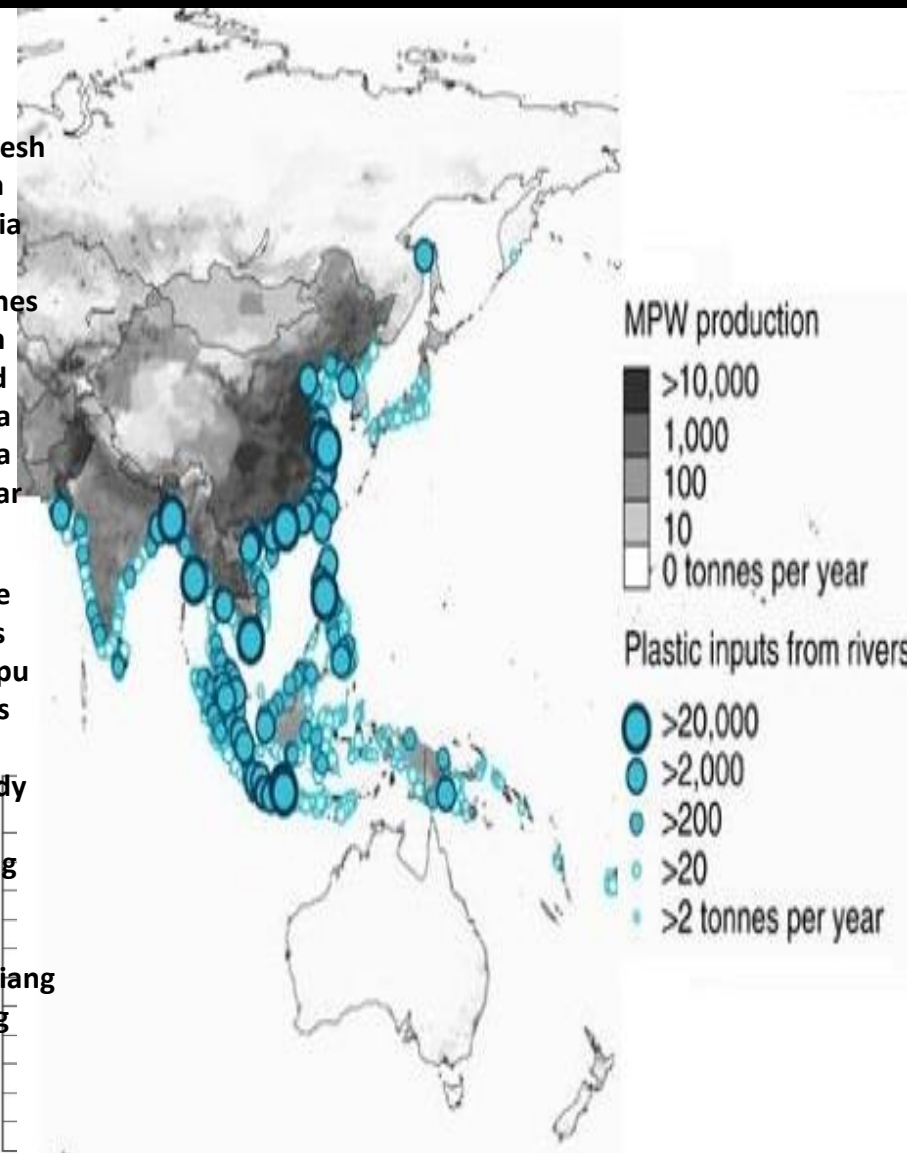
Plastic waste production
 Thousand tonnes per day, 2010
 37
 10
 1
 0,2
 Total plastic waste
 Portion of plastic waste mismanaged

Countries

1. PRC
2. India
3. Bangladesh
4. Pakistan
5. Indonesia
6. The Philippines
7. Vietnam
8. Thailand
9. Sri Lanka
10. Malaysia
11. Myanmar

Rivers

1. Yangtze
2. Ganges
3. Huangpu
4. Brantas
5. Pasig
6. Irrawady
7. Solo
8. Mekong
9. Dong
10. Serayu
11. ZuZhujiang
12. Hajiang
13. Progo

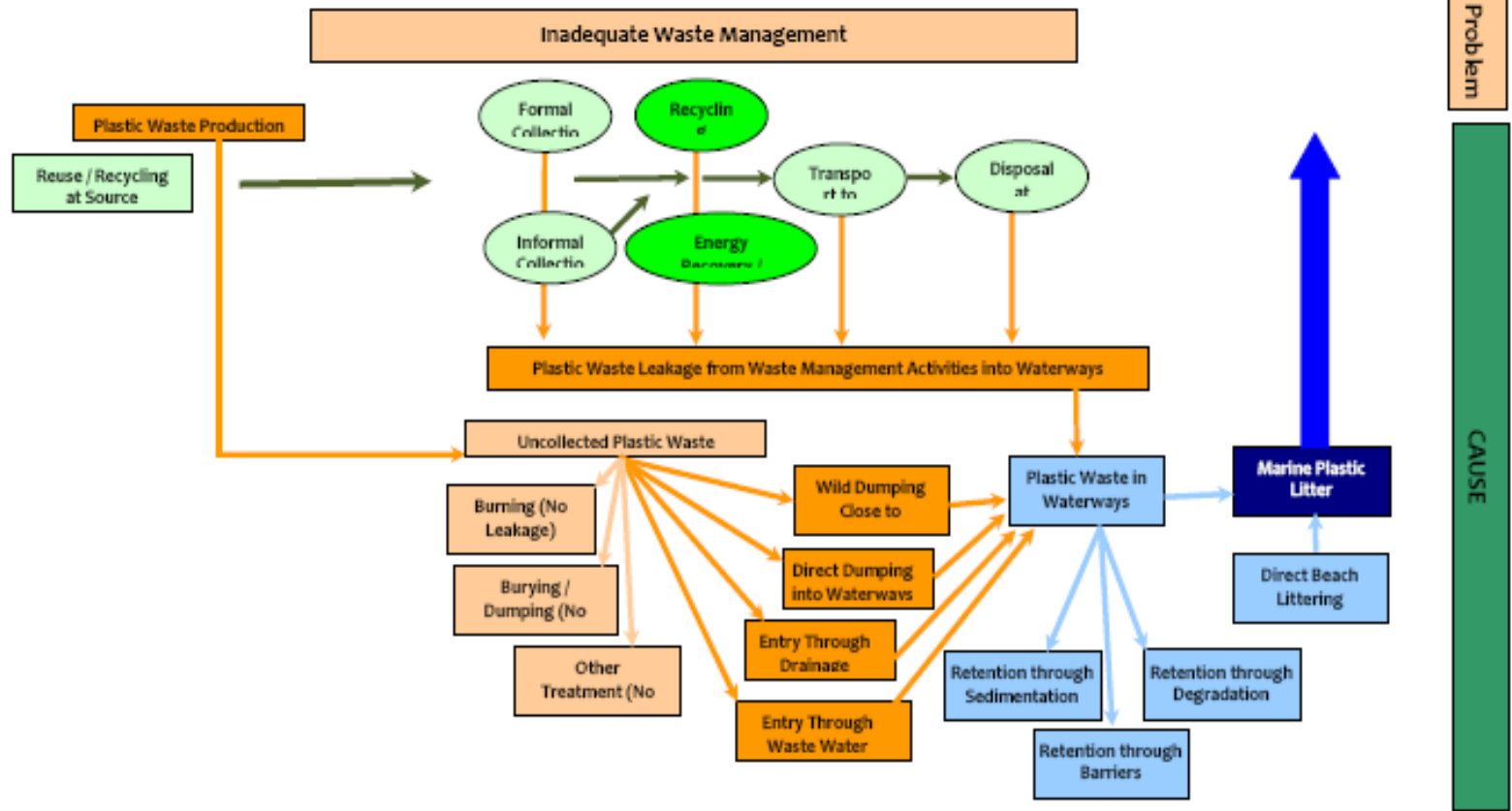
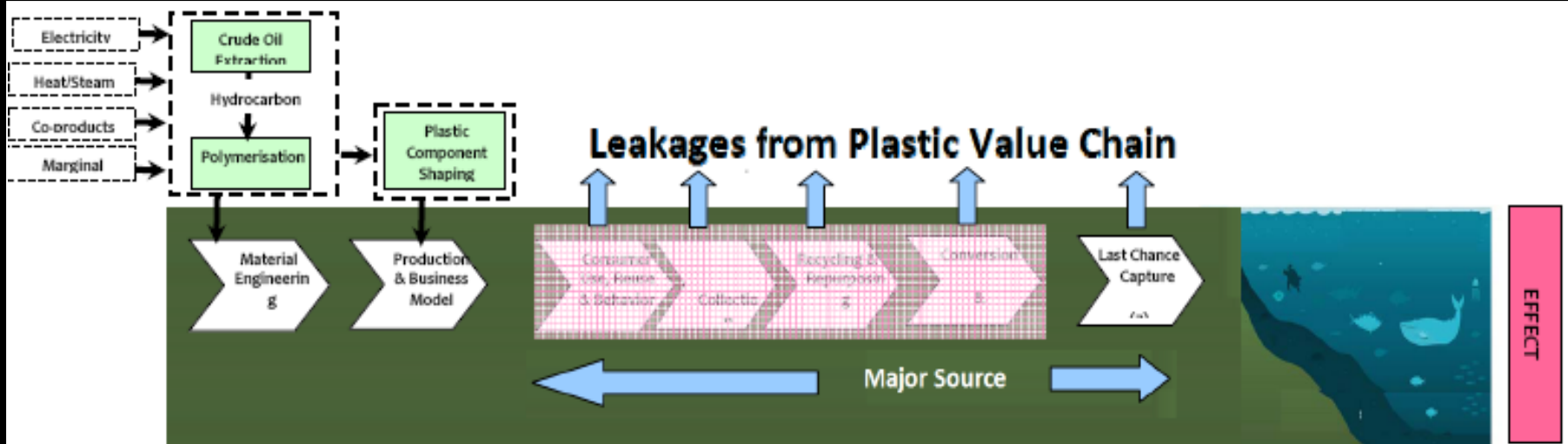


MPW production

>10,000
 1,000
 100
 10
 0 tonnes per year

Plastic inputs from rivers

>20,000
 >2,000
 >200
 >20
 >2 tonnes per year



Resource Intensity (Asia Pacific)

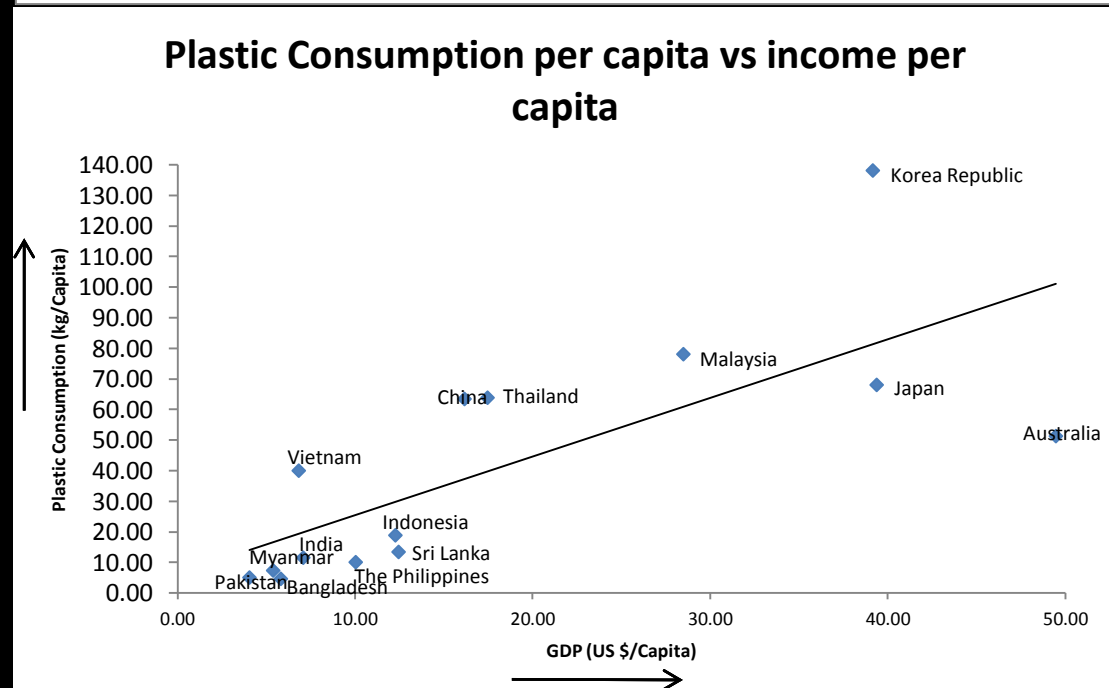
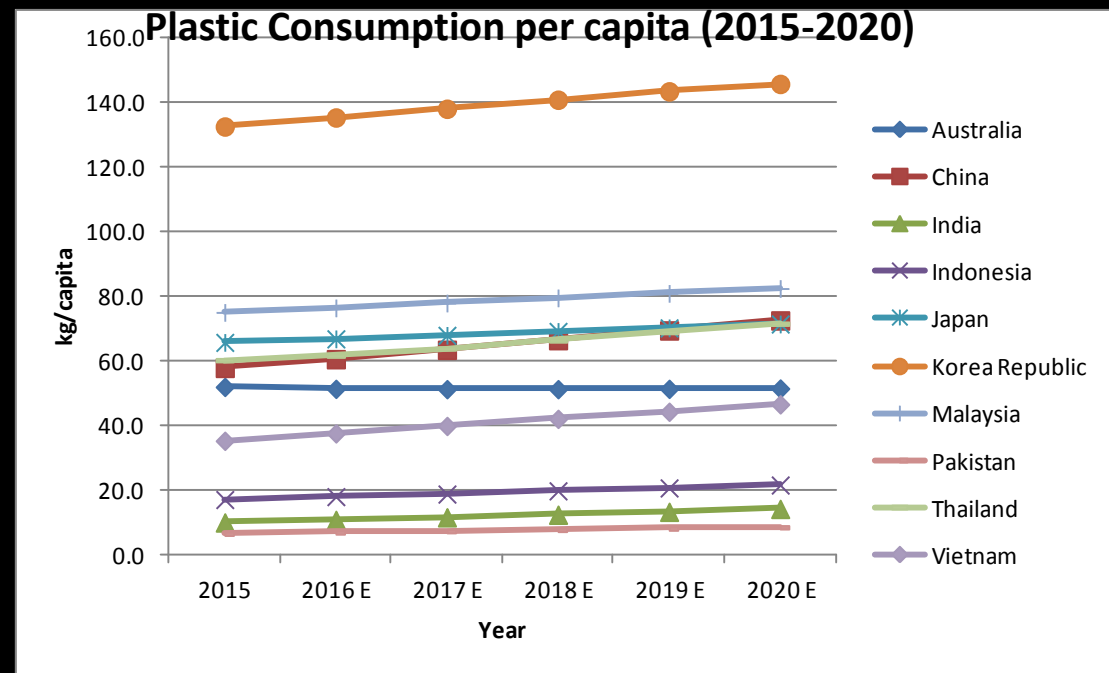
1. Population about 4 billion (2017) to 5.08 billion by 2050 (60% of the world's total population)
2. Urbanization (Urban population from 48% of the region's population in 2017 to 63% of the total by 2050)
3. Economic growth GDP of the major countries in the region was above 25 trillion ranging from US\$ 583 to US\$ 73,187 per capita.
 - About two thirds of the regional economies, accounting for 80% of the region's GDP, achieved faster economic growth in 2017
 - Developing Asia-Pacific economies grew by an estimated 5.8% in 2017 (projected to grow by 5.5% by 2019)
 - Growing purchasing power and the domestic private consumption are the major economic growth drivers

Resource Intensity (Asia Pacific) contd.

1. Material consumption has increased sharply over the past four decades, accounting for more than 50% of world consumption while material productivity has not improved
2. Materials use (biomass, fossil fuels, metal ores and non-metallic minerals) increased from 26.3 billion tonnes in 2005 to 46.4 billion tonnes in 2015, an annual growth rate of 6.1%, which is higher than the economic and population growth rates
3. Domestic material consumption per person increased from 2.9 tonnes in 1970 to 11.9 tonnes in 2015, with a high growth rate at 5.2% per annum, and has now surpassed the global average of 11.2 tonnes.
4. Energy generation continues to rely on fossil fuels
5. The region accounts for more than 50% of the world's water use where water intensity is more than double of the world average.

Trends in Plastic Consumption

1. Plastic consumption ranges from 0.13% to 0.75% of material consumption
2. Importer of fossil fuel, the feedstock for manufacturing plastics
3. Positive correlation exist between GDP growth rate and plastic consumption in the region
4. Increasing trends of plastic consumption (Packaging 40 – 50 %)



Note: Refer China as PRC

Plastic Waste Management (Asia Pacific)

1. (MSW) for Asia and the Pacific was estimated at around 870 million tonnes in 2014 to 1.4 billion tonnes a year by 2030
2. An average generation rate of 1.4 kilograms per person per day, accounting for 43% of the world total (2014) to 1.6 kilograms per person per day (2030)
3. The proportion of plastic, is around 8–12% across all the countries
4. Average plastic waste generation in the region is expected to reach 140 million tonnes by 2030.
5. Majority of plastic waste, which comes mixed with solid waste ranges from 0.02 to 0.04 tonnes per capita per year
6. Strong correlation, which exists between per capita waste generation and the income level of a country
7. The higher the per capita GNI (gross national income), the higher is the per capita MSW generation

Plastic Waste Management (Asia Pacific)

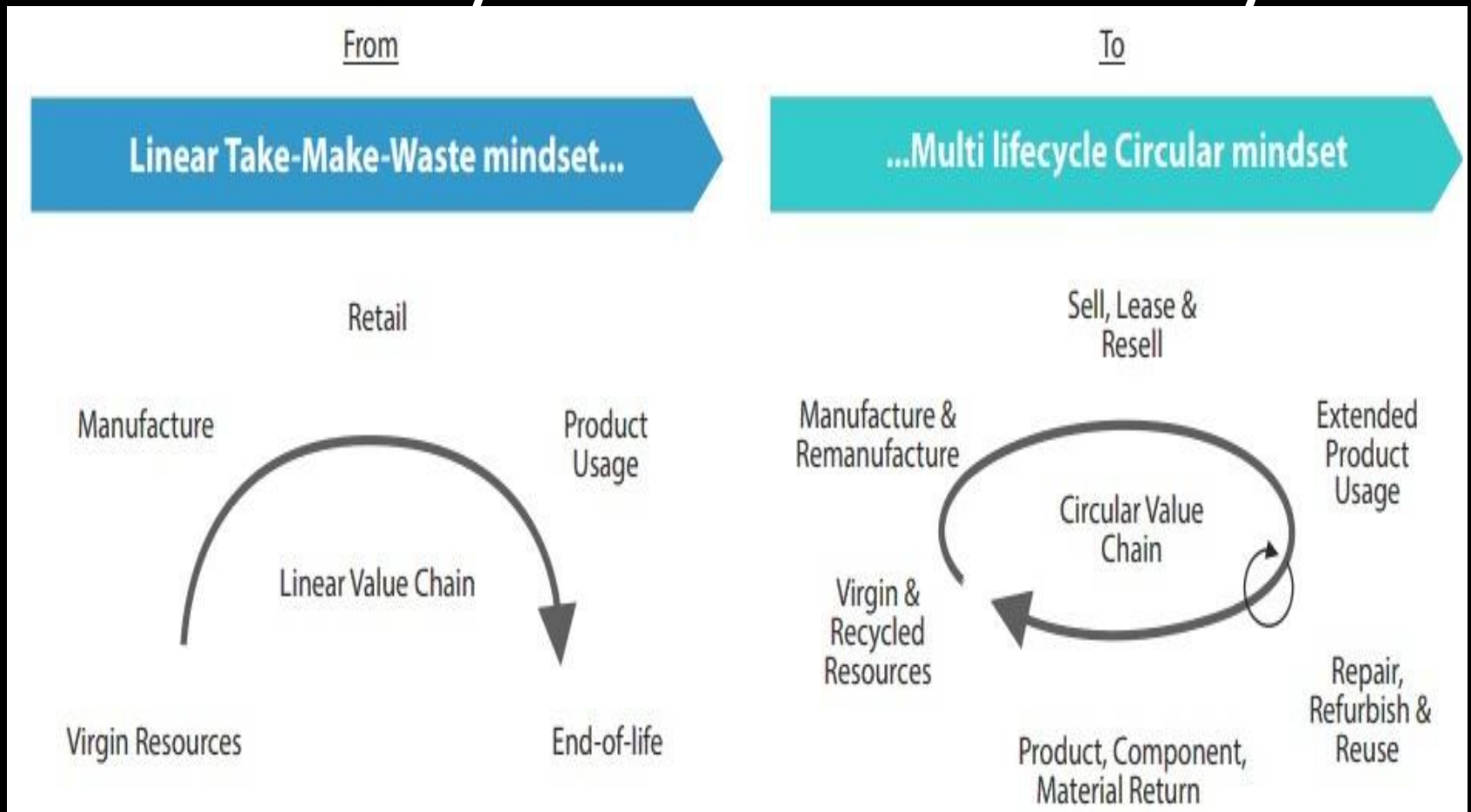
Contd.

8. Waste collection rates are moderate (40–80%) in developing countries, 100% in more developed economies (Japan, Australia, Republic of Korea and Singapore)
9. Waste separation at source is a common practice in more developed countries while in low- and middle-income countries (informal waste separation)
10. About 55 to 74% of the municipal solid waste is disposed off at disposal sites with zero to 26% being incinerated and 1 to 5% composted
11. Recycling rates in high-income countries have increased progressively over the past 30 years, while in lower-income countries the informal sector often only achieves recycling rates of 20–30% for municipal solid waste
12. Globally, around 14%-18% of waste plastics generation is collected for recycling, 24% is thermally treated (e.g. by incineration, gasification or pyrolysis), remainder is disposed off in controlled, landfill, uncontrolled landfill, or the natural environment. Plastic recycling rate (all types) in the region is low, majority packaging waste (PET, PP, PE)

Impacts Vs. Response

1. Impacts on Terrestrial Ecosystem
2. Impacts on Aquatic & Marine Ecosystem
3. Health Impacts
4. Climate Change
5. Socio economic impacts (Campbell and Rule, 2011 has reported that Marine plastic debris account for annual losses of US\$ 622 million for the tourism sector in the Asia Pacific Economic Area. APEC forum further estimates that the cost of ocean plastics to the tourism, fishing and shipping industries is US\$ 1.3 billion in the region alone)
6. Emerging policy & Regulatory response majorly focused on packaging & other single use plastics (SWM Regulations, Bans, Restrictions, EPR, Recycling rates, Levees, Fees, Taxes etc.)

Plastic Economy to Circular Economy & SDGs



From Current Plastic Economy



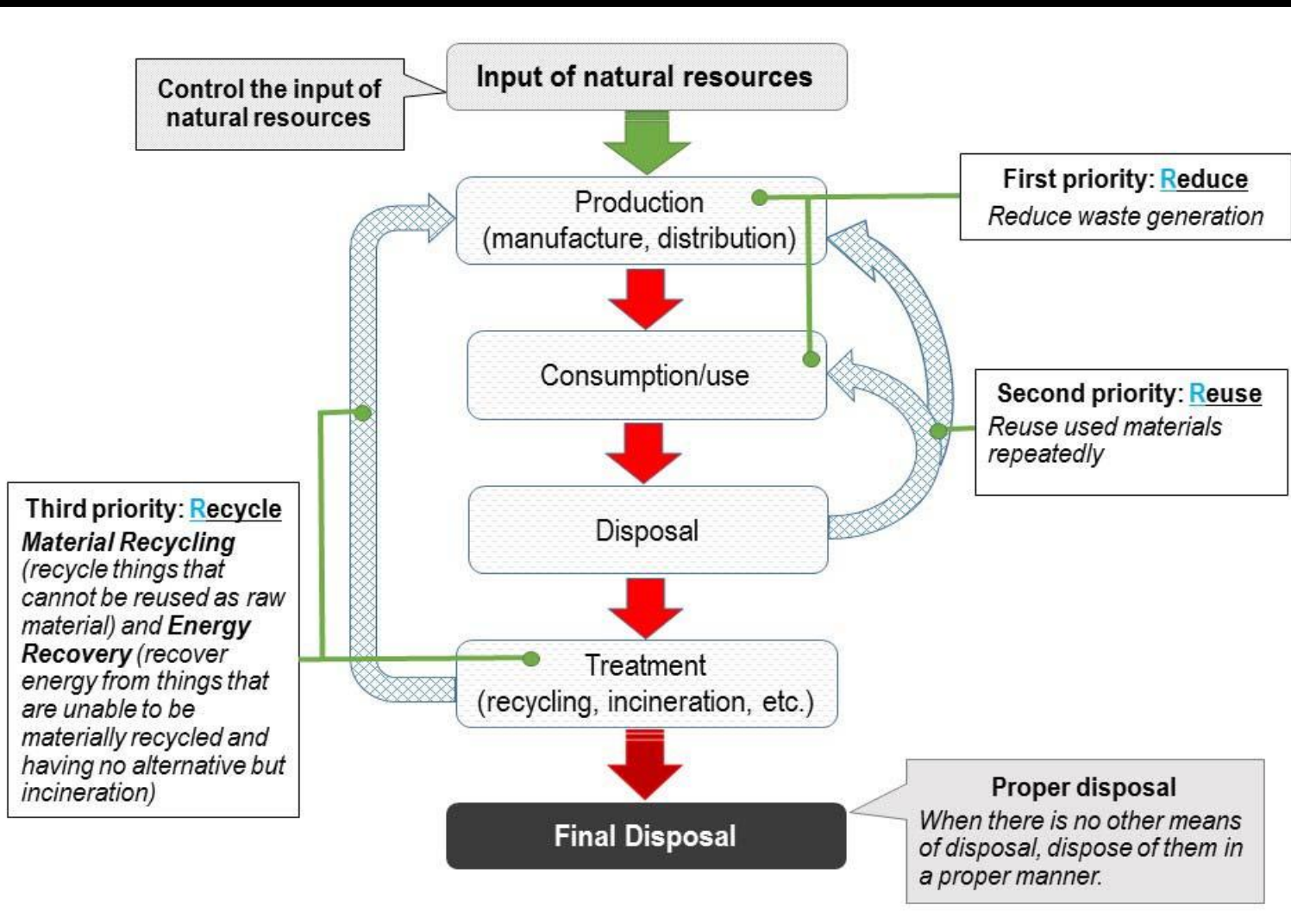
Circular Economy

Five SDGs (SDG 6, 11, 12, 14 and 15) are relevant to reducing the inputs and impacts of waste plastic on terrestrial & marine ecosystem. Coverage: sustainable management of water and sanitation; sustainable consumption and production; inclusive, safe, resilient and sustainable use of terrestrial & marine ecosystem while ensuring their protection, restoration & conservation.

Plastic Economy to Circular Economy & SDGs (12 & 14) contd..

1. SDG target 12.4 clearly states that “By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment”
2. SDG target 12.5 clearly aims at , “By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.
3. SDG Target14.1 is one of the most important and aims “By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.

3 Rs Approach to Achieve Circularity



Ha Noi 3R Declaration which proposed 33 goals and their indicators to monitor the progress of implementation of each goal in Asia and the Pacific region For 2013 - 2023

Major Challenges/ Enablers / Way Forward

1. Policy & Regulatory (Linear Vs. Circularity, 3Rs, Coverage, Type of intervention e.g. ban on items such as single use, ban from landfill, statutory targets for recycling rate, EPR etc.)
2. Economic instrument e.g. resource tax,
3. Technology (Recycling Vs. WtE, Waste plastic sorting, technology for recycling mixed plastics, Thermosets, Alternate materials)
4. Knowledgebase, Data & Information (Baseline data across region; Impacts assessments across terrestrial, aquatic, marine ecosystem, health & socio economics; Human resources/ experts; Indicator monitoring; Capacity building; Sharing of best practices
5. Voluntary measures (Industry led market transforming interventions/ projects, better labeling and declarations on packaging, sustainability reporting SDG 12, 14)

THANK YOU

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