Thailand Stakeholder Consultation on Reducing Marine Litter by addressing the management of plastic value chain in South East Asia
7th June 2019, The Sukosol Hotel, Bangkok, Thailand

Measuring impact and sharing solutions - A closer look at indicators for success
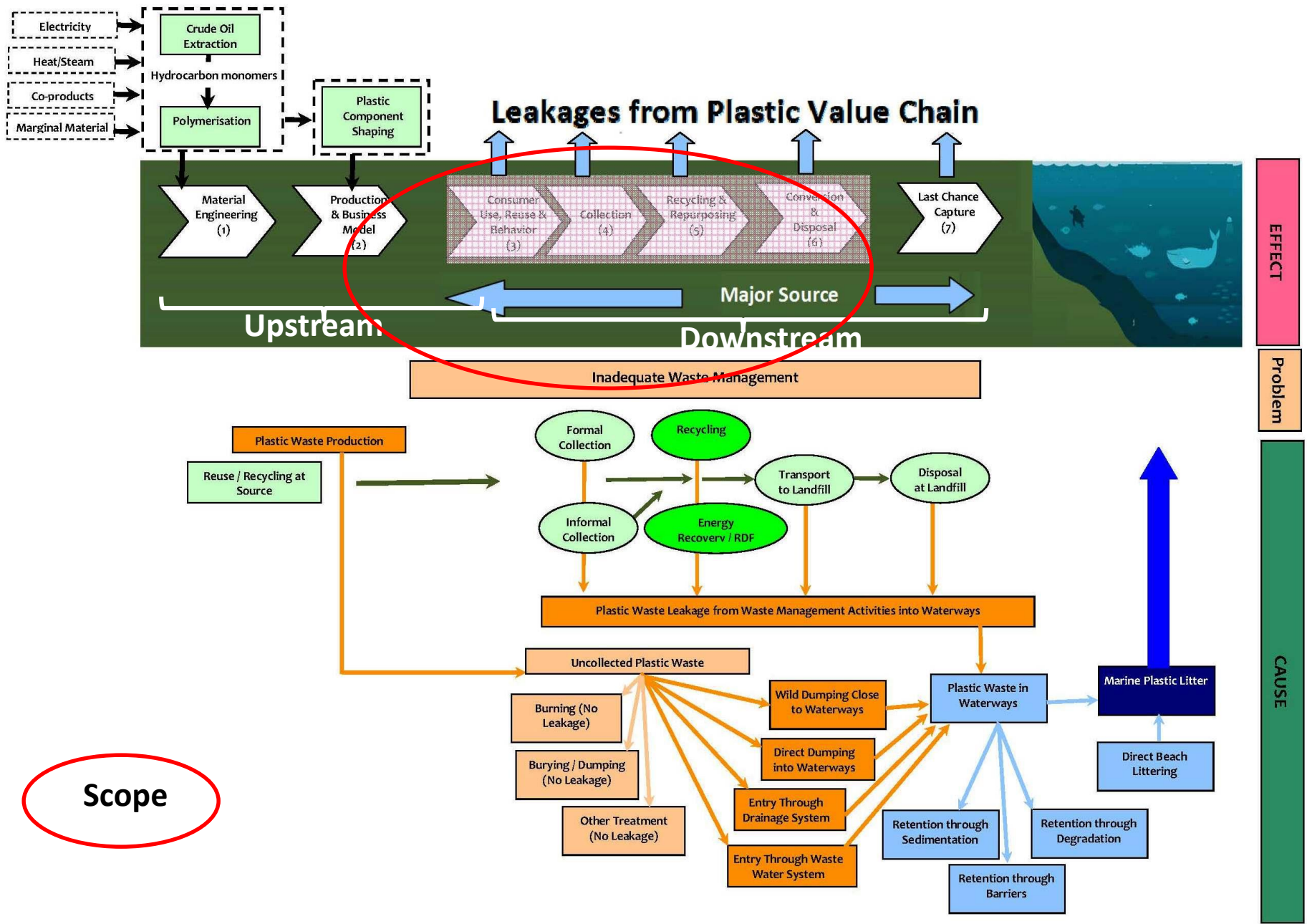
Presented By:
Amit Jain
Managing Director,
IRG Systems South Asia Pvt. Ltd./ International Consultant
UN Environment

Contents

1. Plastic Value Chain & Plastic Waste Leakage, Plastic Pollution Sources & Impacts
2. Outcome Indicators
3. Upstream
4. Downstream
5. Overarching
6. Major Challenges & Sharing Solutions

Plastic Value Chain & Plastic Waste Leakage

Electricity
Heat/Steam
Co-products
Marginal Material

Crude Oil Extraction
Hydrocarbon monomers
Polymerisation
Plastic Component Shaping

Leakages from Plastic Value Chain

Material Engineering (1)
Production & Business Model (2)
Consumer Use, Reuse & Behavior (3)
Collection (4)
Recycling & Repurposing (5)
Conversion & Disposal (6)
Last Chance Capture (7)

Major Source

Upstream
Downstream

EFFECT
Problem
CAUSE

Inadequate Waste Management

Plastic Waste Production
Reuse / Recycling at Source

Formal Collection
Recycling
Informal Collection
Energy Recovery / RDF
Transport to Landfill
Disposal at Landfill

Plastic Waste Leakage from Waste Management Activities into Waterways

Uncollected Plastic Waste
Burning (No Leakage)
Burying / Dumping (No Leakage)
Other Treatment (No Leakage)

Wild Dumping Close to Waterways
Direct Dumping into Waterways
Entry Through Drainage System
Entry Through Waste Water System

Plastic Waste in Waterways
Retention through Sedimentation
Retention through Barriers
Retention through Degradation

Marine Plastic Litter
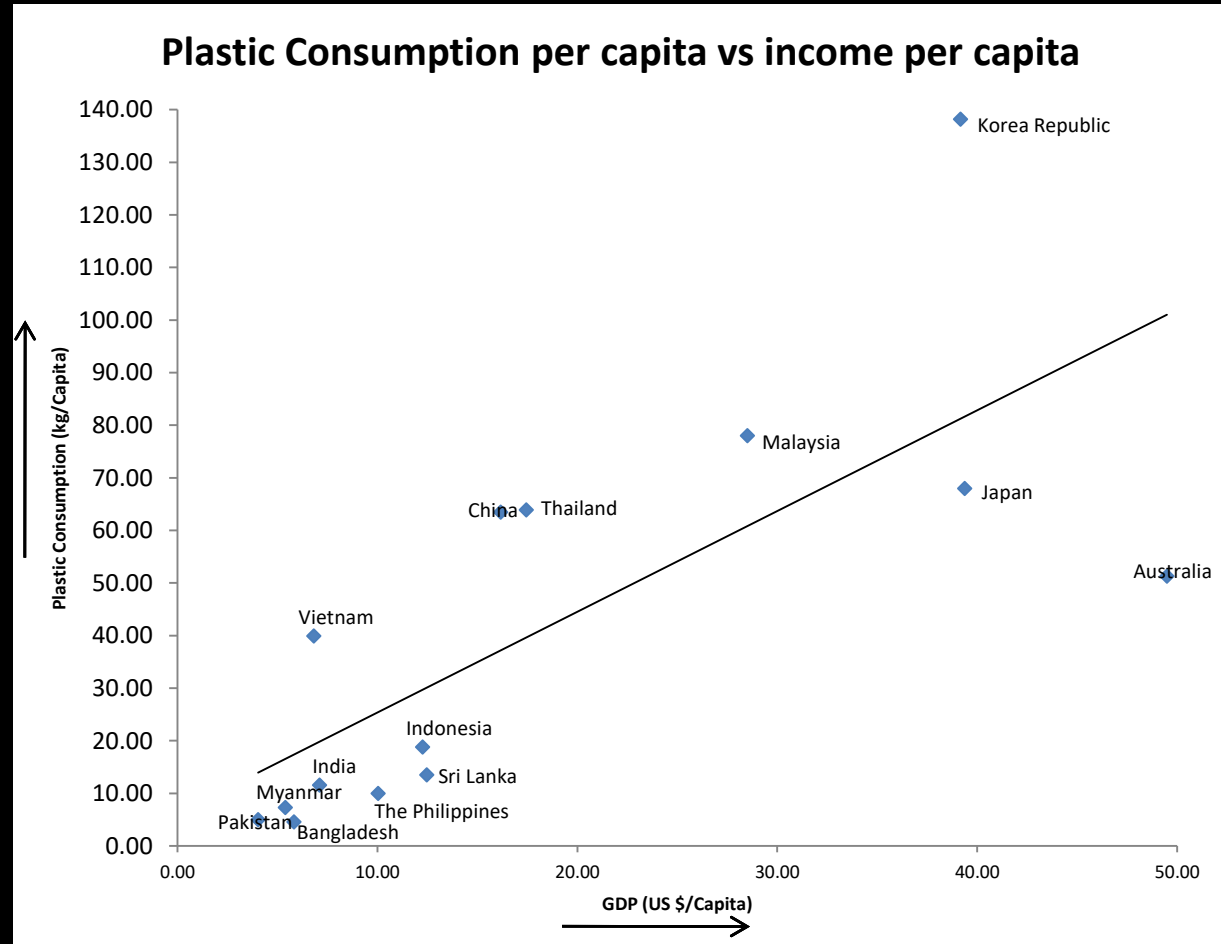Direct Beach Littering

Scope

Outcome Indicators

1. National production and sale of LDPE, HDPE, PET, PS, PP and EPS
2. Variety of alternative packaging (item)
3. Increase in collection of PET bottles for recycling (by tonnage)
4. Packaging recycling rate
5. Increased consumer awareness on marine litter and plastic pollution
6. Number of governments at all levels that are implementing waste prevention and sound management policies and good practices, with UNEP support

Upstream

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
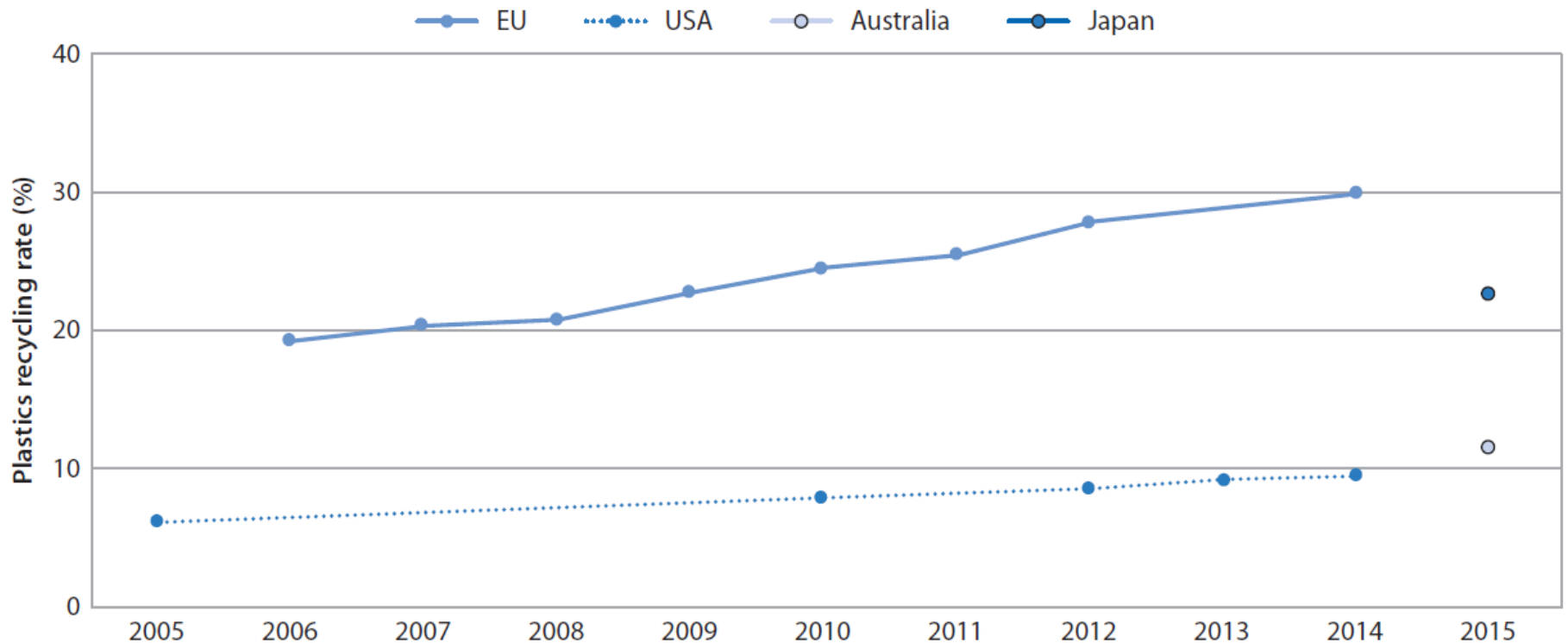4. Increasing trends of plastic consumption (Packaging 40 – 50 %)

Plastic Consumption per capita vs income per capita

Plastic Consumption (kg/Capita)

140.00
130.00
120.00
110.00
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00

Korea Republic
Malaysia
Japan
China ◆ Thailand
Australia
Vietnam
Indonesia
India
Sri Lanka
Myanmar
The Philippines
Pakistan
Bangladesh

GDP (US $/Capita)

0.00   10.00   20.00   30.00   40.00   50.00

Trends in Plastic Consumption (Contd.)

S.No.	Outcome Indicator	Baseline identified during the inception phase	Baseline Year	Means of Verification
1.	National production and sale of LDPE, HDPE, PET, PS, PP and EPS	Indonesia 6.5% increase; Malaysia 3.9% increase; Thailand 4.16% increase; Vietnam 7.2% increase.	Change between 2016 and 2017	industry reports
2	Variety of alternative packaging (item)	0 (no systematic documentation so far)		case studies, factsheets and product information

Downstream

Plastic Waste Management

1. Strong correlation exists between per capita waste generation and the income level of a country

2. The higher the per capita GNI (gross national income), the higher is the per capita MSW generation

Plastic Waste Management Contd.

S.No.	Outcome Indicator	Baseline identified during the inception phase	Baseline Year	Means of Verification
3.	Increase in collection of PET bottles for recycling (by tonnage)	44 - 59% in Bangkok; 32 - 43% in Phuket; 20.8 - 27.9% for Kuala Lumpur	2018	industry reports
4.	Packaging recycling rate	To be determined during the third quarter of 2019		industry reports; governmental reports on SDGs

Overarching

Overarching

S.No.	Outcome Indicator	Baseline identified during the inception phase	Baseline Year	Means of Verification
5	Increased consumer awareness on marine litter and plastic pollution	To be confirmed after the joint survey with FIA in the third quarter of 2019	2019	consumer awareness survey with FIA and AlphaBeta in 2021
6.	Number of governments at all levels that are implementing waste prevention and sound management policies and good practices, with UNEP support	Cambodia and Phnom Penh	2018	Progress report by the International Environmental Technology Centre (IETC)/ UN Environment

Major Challenges & Solutions

Major Challenges & Solutions

1. Collection & Monitoring of Data
2. Definitions (Single Use Plastic, PET bottle Collection & Recycling Rate)

Name of Resin / Polymer	Single Use Plastic Product
LDPE	Bags, trays, containers, food packaging film
HDPE	Milk bottles, freezer bags, shampoo bottles, ice cream containers
PET	Bottles for water and other drinks, dispensing containers for cleaning fluids, biscuit trays
PS	Cutlery, plates and cups
PP	Microwave dishes, ice cream tubs, potato chip bags, bottle caps
EPS	Hot drink cups, insulated food packaging, protective packaging for fragile items

Major Challenges & Solutions (Contd.)

2. Total PET bottles collected has been defined in terms of (a) Collection by waste service contractor (Landfill + Junk shop) (b) Rag pickers to junk shop (c) Landfill to junk shop

3. Recycling is defined as reuse of material in production process that diverts it from the waste stream, except for recycling within industrial plants and the reuse of material as fuel. "Recycling rates" are the ratios of the quantity collected for recycling to the apparent consumption

THANK YOU

amit@irgindia.com / amit@irgssa.com