



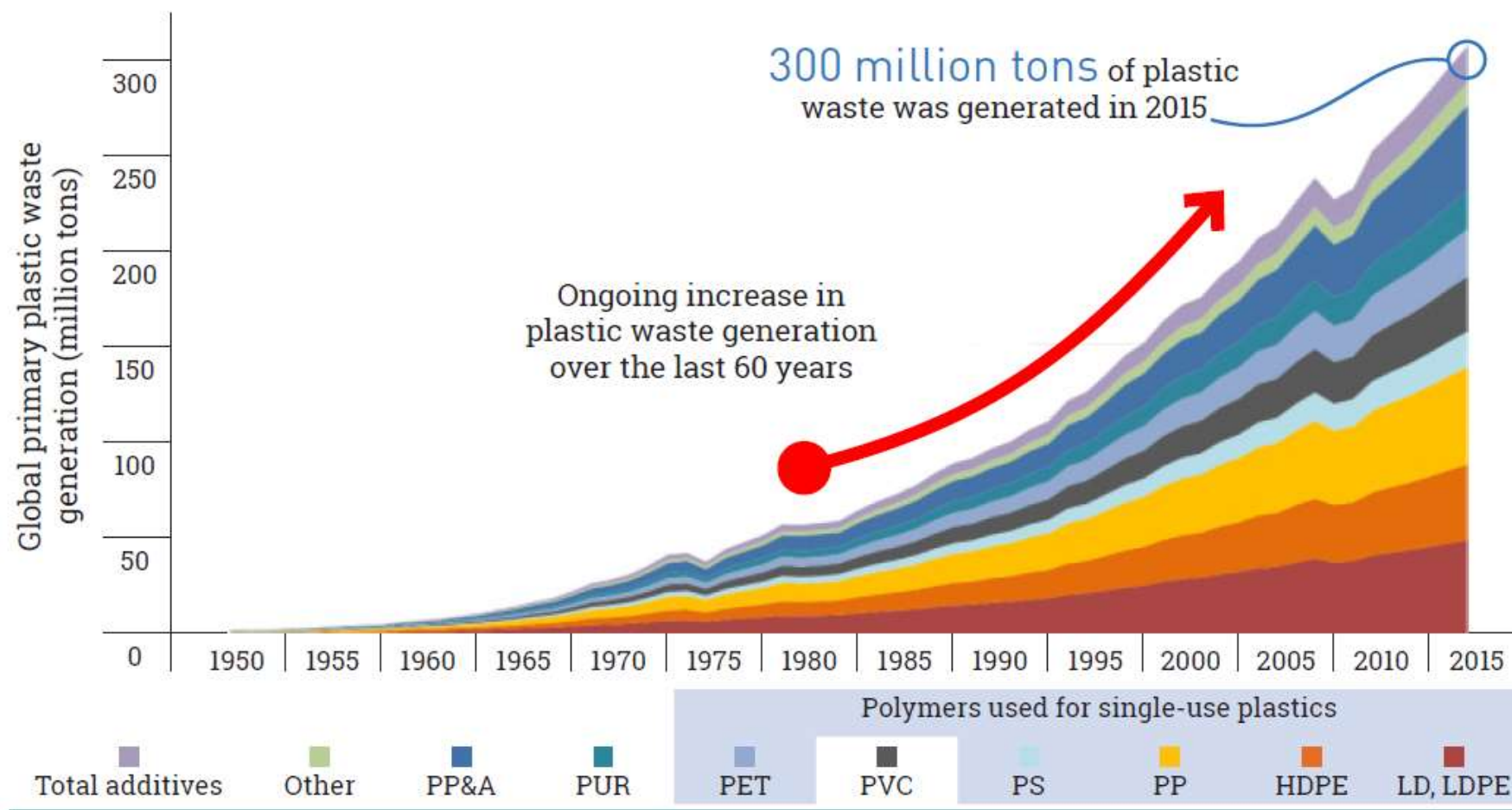
Global Issues of Marine Plastics and Current Situation of Asian Countries

UN-Habitat the 10th Environmental Technology Expert Group Meeting

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Global primary plastics waste generation (1950–2015)



Source: Adapted from Geyer, Jambeck, and Law, 2017

Global plastic production by industrial sector (2015)



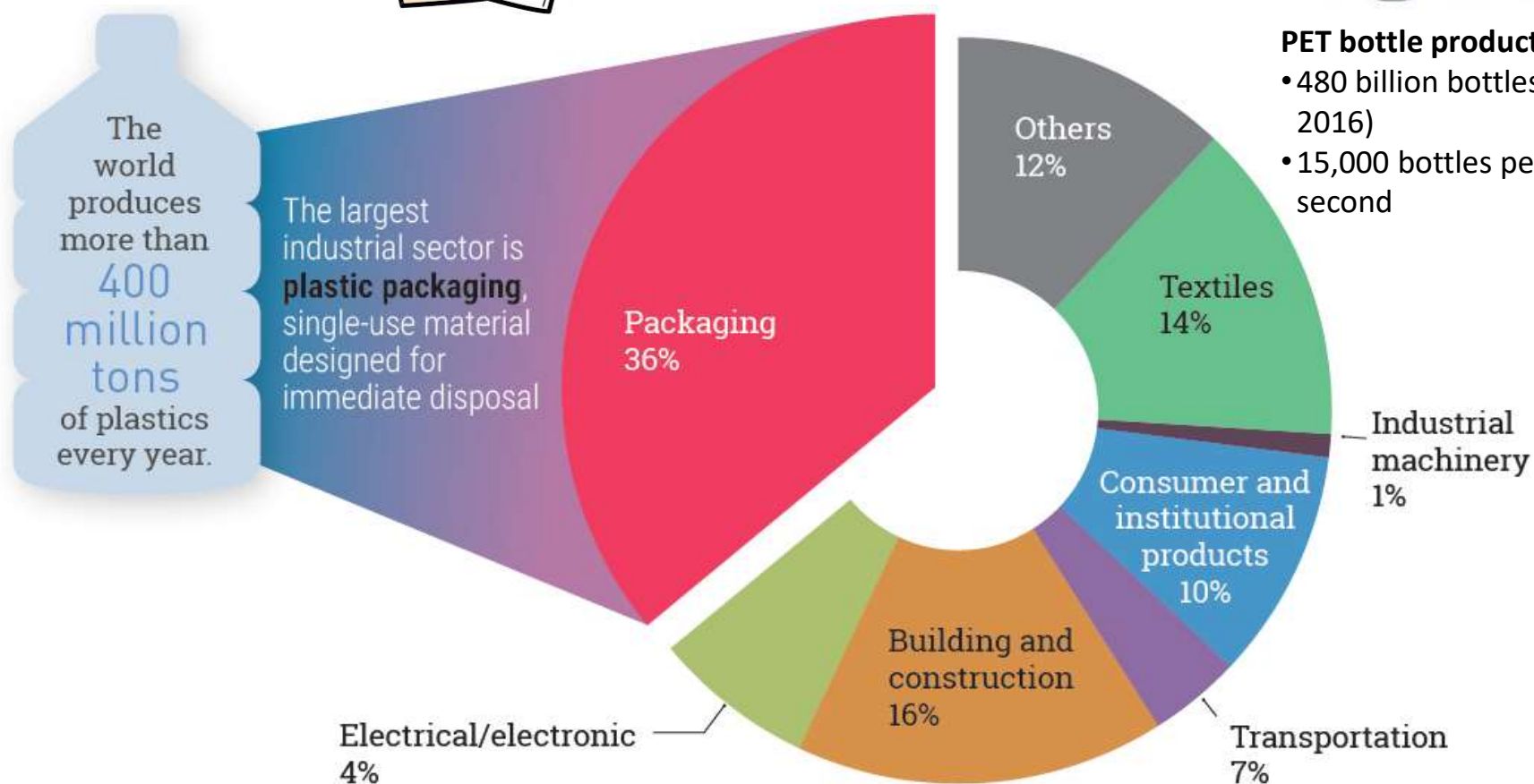
Shopping bags

- 2~10 million bags are used per a minute
- Average usage time is 12~20 minutes



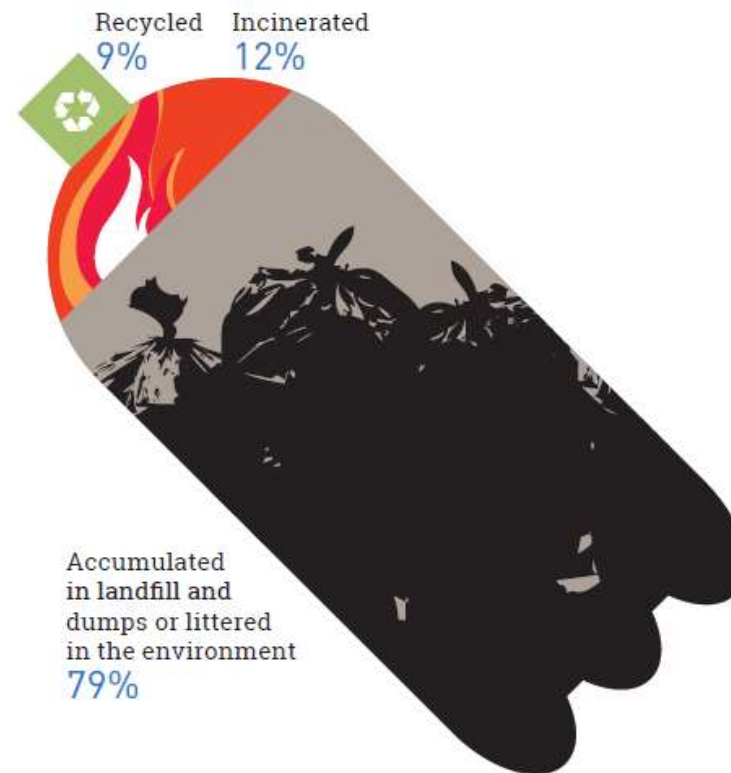
PET bottle production

- 480 billion bottles (in 2016)
- 15,000 bottles per second



Source: Adapted from Geyer, Jambeck, and Law, 2017

Disposal of all plastic waste ever generated (as of 2015)

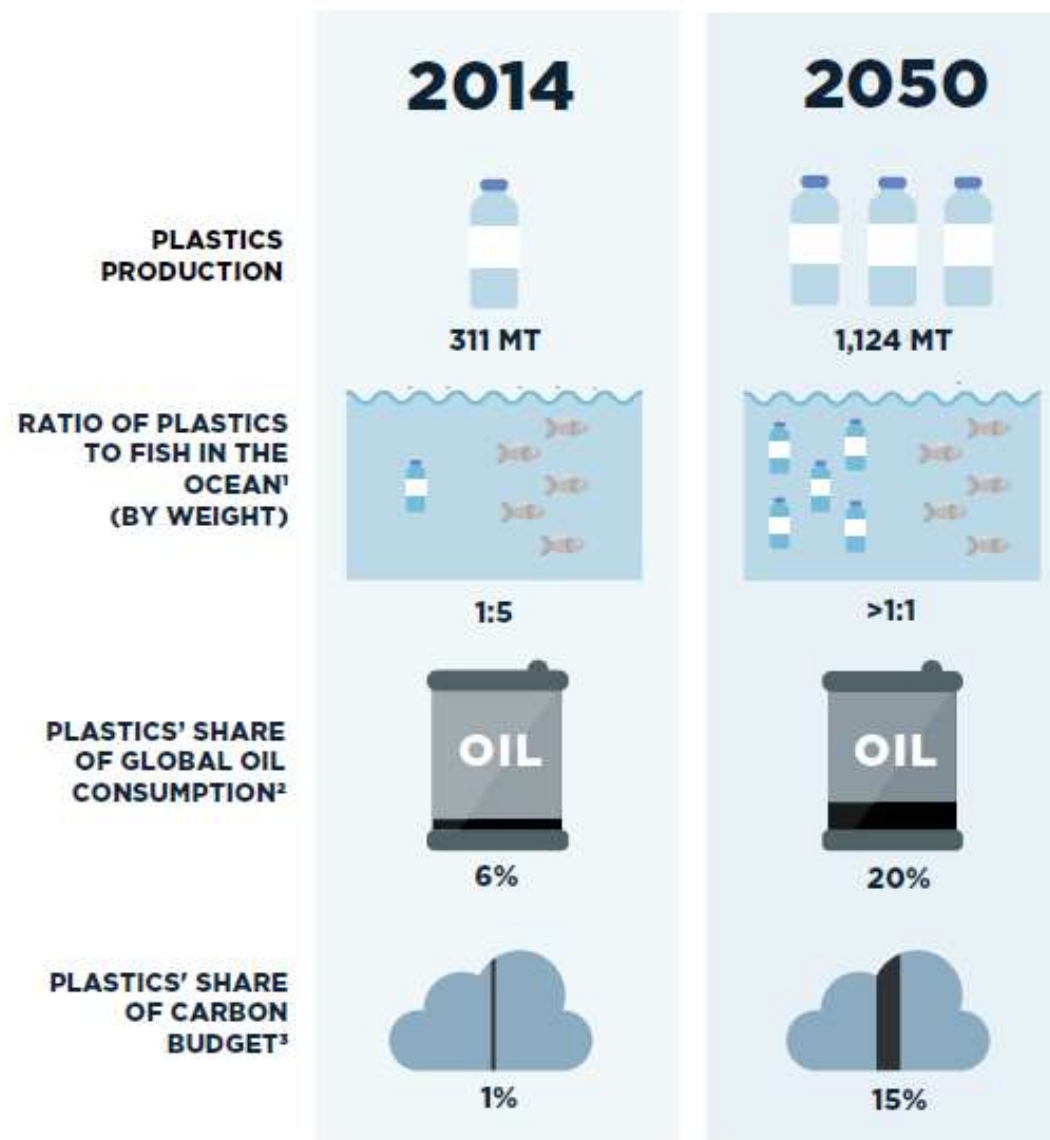


Largest generators of mismanaged plastic waste (2010)

China	8.8 million Mt/year	27% of world total
Indonesia	3.2 million Mt/year	10% of world total

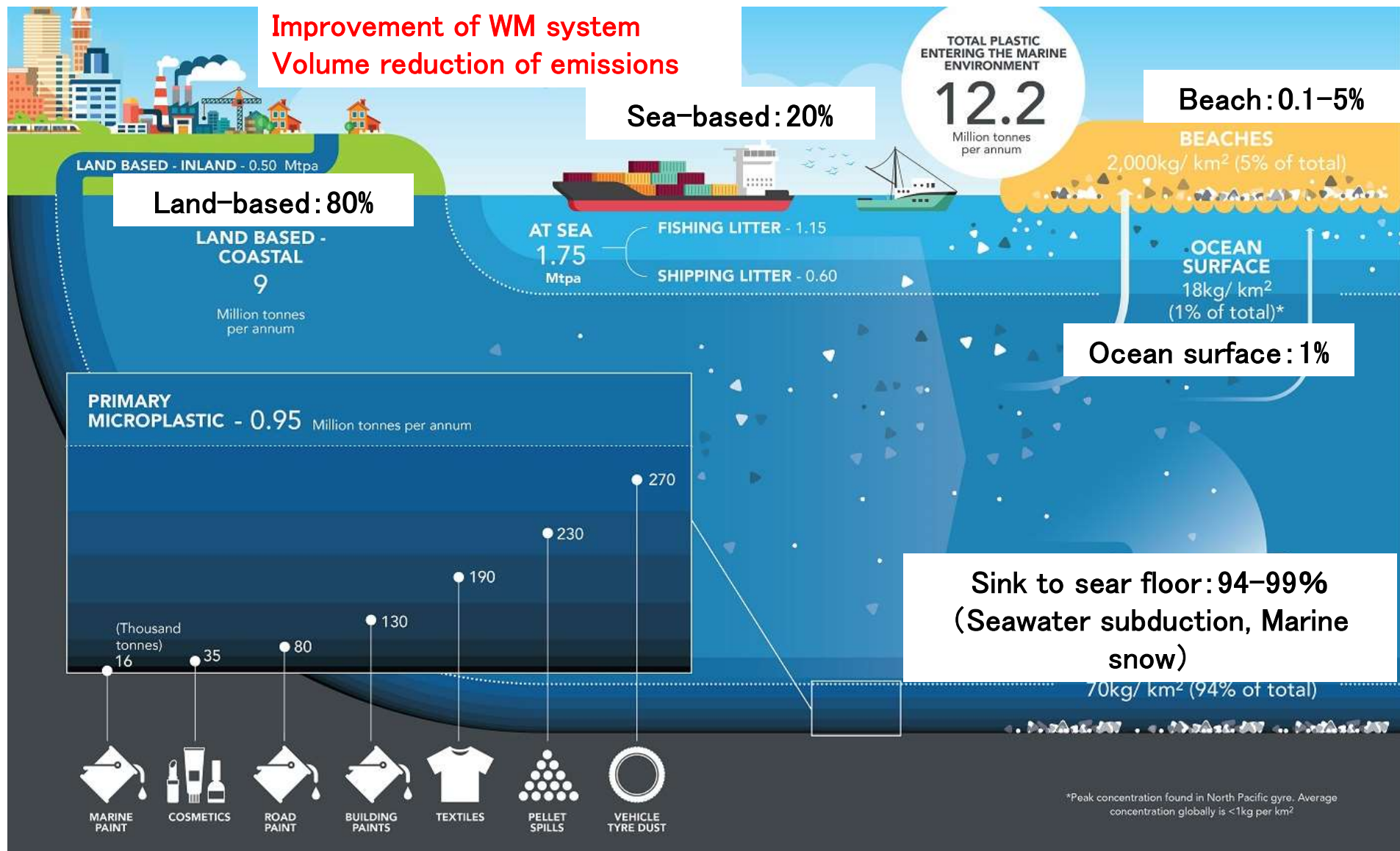
Source: Adapted from Geyer, Jambeck, and Law, 2017; Jambeck et al., 2015

Forecast of plastics volume growth



Source: Ellen Macarthur Foundation (2016)

Plastic pollution in marine environment



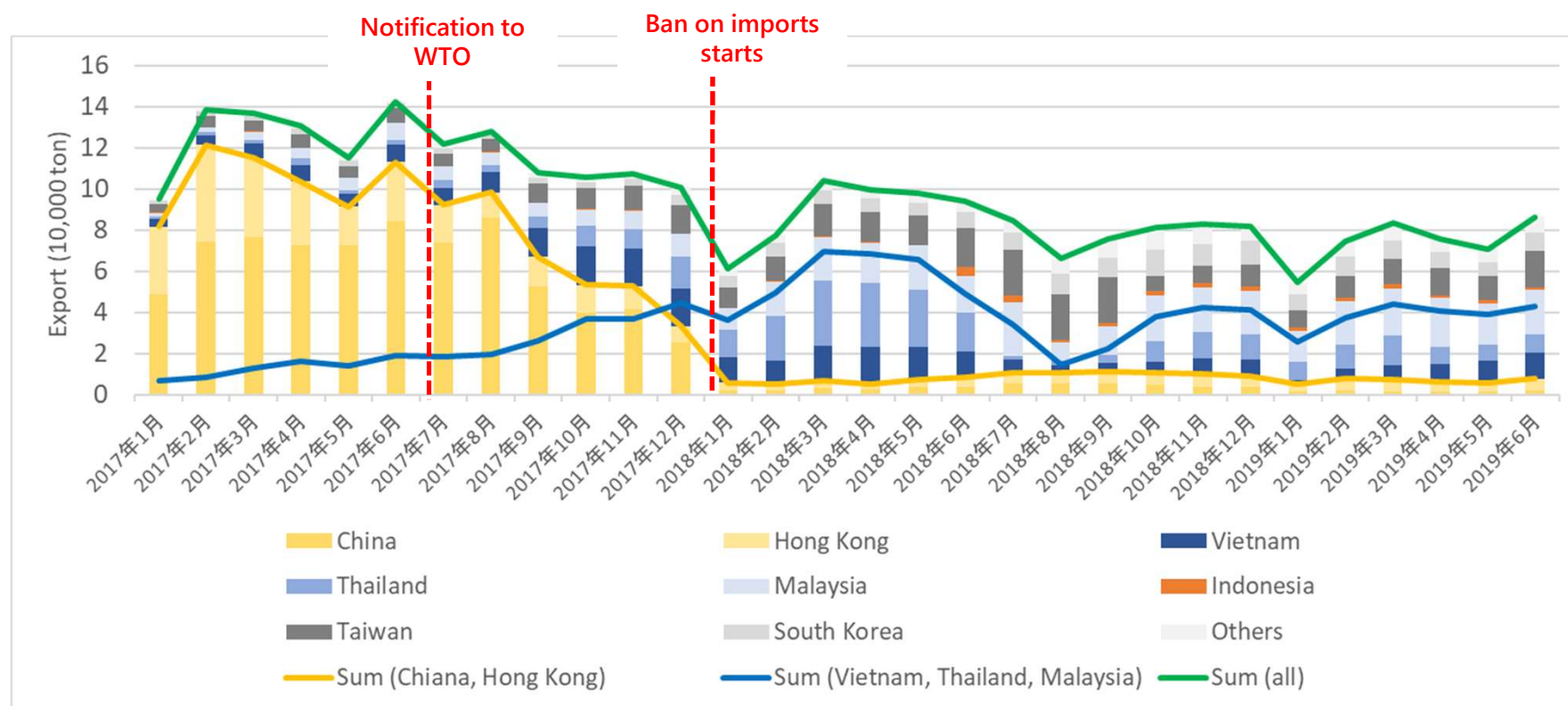
<https://www.eunomia.co.uk/marine-plastics-we-should-fight-them-on-the-beaches/>

International trend of waste plastic issues

	2016	2017	2018	2019
Ocean Plastic Waste		UN Environment Assembly (UNEA3) Resolution for "Marine litter and microplastics" (Dec, 2017)	G7 Ocean Plastics Charter @G7 Charlevoix Summit (Jun, 2018) "ASEAN+3 Marine Plastics Debris Cooperative Action Initiative" (Nov, 2018) UNEA4, Resolution for "Marine plastic litter and microplastics" (Mar, 2019)	The Alliance to End Plastic Waste (Jan, 2019) "Action Plan for measuring marine plastic waste" (May, 2019) G20 Osaka Blue Ocean Vision (Jun, 2019)
Restrictions on plastic scrap imports/exports		China's ban on import of plastic scrap (Jan, 2018)		Basel Convention includes unrecyclable and contaminated plastics (May, 2019)
Circular Economy	Circular Economy Package (EU, 2015)	Toyama Framework on Material Cycles (G7, 2016)	EU Plastic Strategy (EU, 2018)	Japan's Resource Circulation Strategy for Plastics (May, 2019)
Waste plastics-related reports	"The New Plastic Economy" (Ellen MacArthur Foundation, 2014)		"Single-use Plastics: A roadmap for Sustainability" (UNEP, 2018)	

Changes in exports of plastic scrap from Japan

- China's restrictions on plastic scrap imports started at its notification to WTO in July 2017.
- Plastic scrap exporters in Japan switched to exporting to countries in Southeast and East Asia, instead of China.
- In 2018, several problems started to emerge, in various countries in Southeast and East Asia, with the rapid increase in imported plastic scraps.
- Movements to ban and restrict the import of plastic scrap began to emerge in various countries in Southeast and East Asia.



Issues of dirty/mixed plastic waste to Southeast Asian countries



<https://www.afpbb.com/articles/-/3227213>



<http://jin115.com/archives/52243641.html>

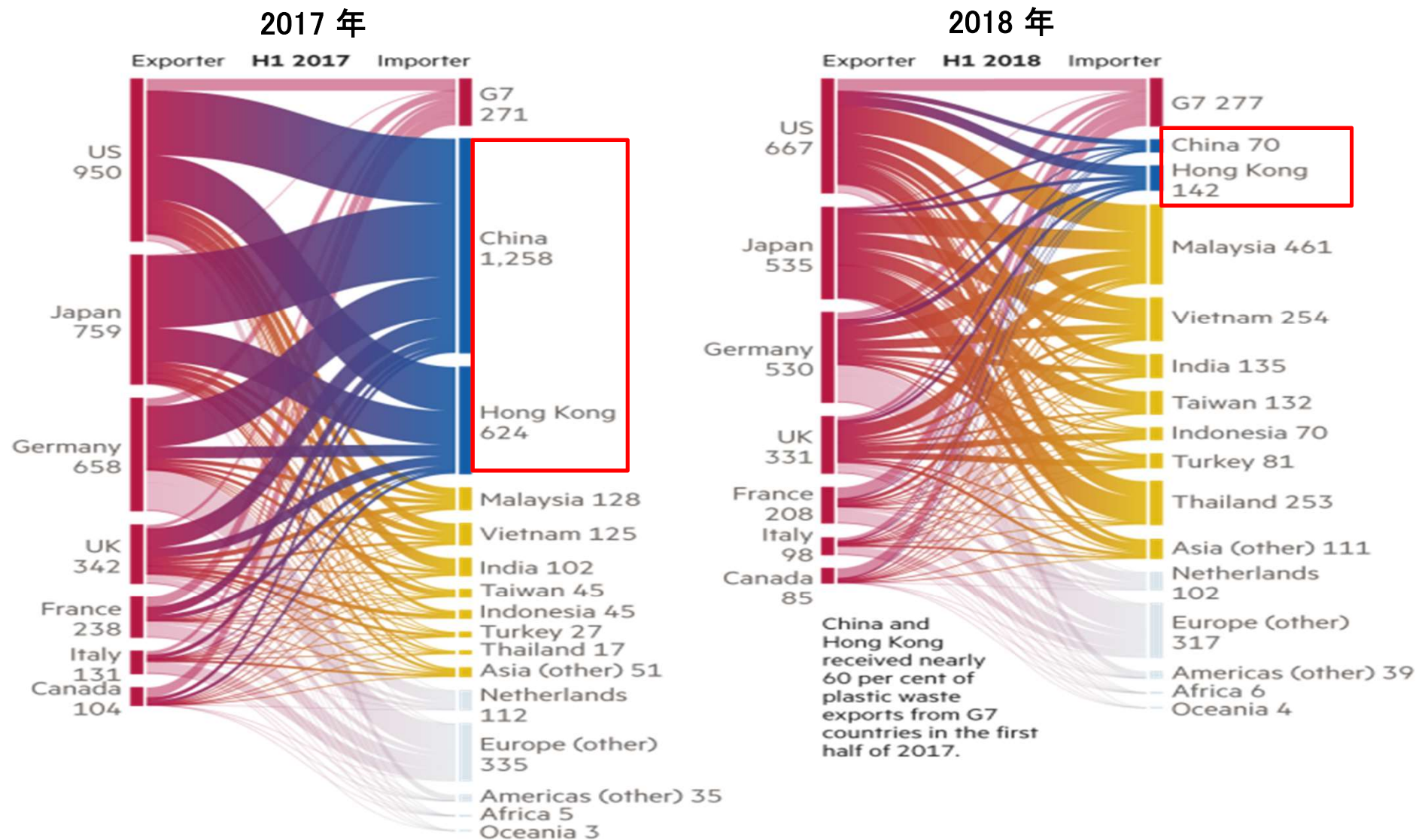


<http://kaigainohannou.info/2018/12/02/gomi-4/>

Geneva, Switzerland. May 10, 2019. The 14th Meeting of the Conference of Parties to the Basel Convention today agreed to include mixed, unrecyclable and contaminated plastic waste exports into the control regime that requires the consent of importing countries before waste exports can proceed.

Source: Basel Action Network

Change of global flow of waste plastics from 2017 to 2018



<https://www.ft.com/content/360e2524-d71a-11e8-a854-33d6f82e62f8>

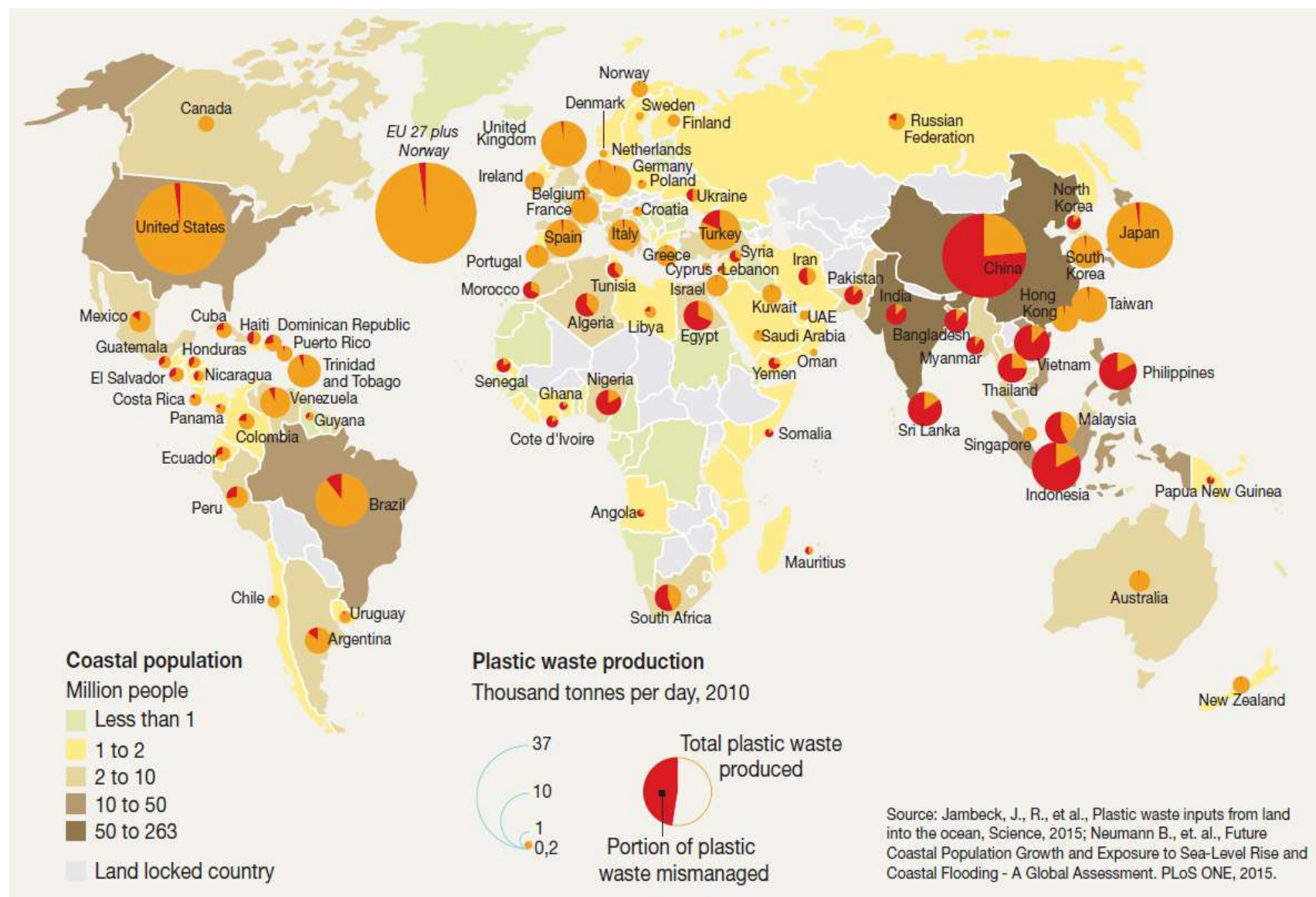
Global Estimate of Marine Plastics Emission

- Targeting **populations living within 50 km of a coast**
- Assuming conversion rates of mismanaged plastic waste to marine debris between **15% – 40%**
- **Mismanaged waste** is the sum of inadequately managed waste plus 2% littering
- **275 million metric tons (MT)** of plastic waste was generated in 192 coastal countries in 2010, with 4.8 to 12.7 million MT entering the ocean.

Rank	Country	Econ. classif.	Coastal pop. [millions]	Waste gen. rate [kg/ppd]	% plastic waste	% mismanaged waste	Mismanaged plastic waste [MMT/year]	% of total mismanaged plastic waste	Plastic marine debris [MMT/year]
1	China	UMI	262.9	1.10	11	76	8.82	27.7	1.32–3.53
2	Indonesia	LMI	187.2	0.52	11	83	3.22	10.1	0.48–1.29
3	Philippines	LMI	83.4	0.5	15	83	1.88	5.9	0.28–0.75
4	Vietnam	LMI	55.9	0.79	13	88	1.83	5.8	0.28–0.73
5	Sri Lanka	LMI	14.6	5.1	7	84	1.59	5.0	0.24–0.64
6	Thailand	UMI	26.0	1.2	12	75	1.03	3.2	0.15–0.41
7	Egypt	LMI	21.8	1.37	13	69	0.97	3.0	0.15–0.39
8	Malaysia	UMI	22.9	1.52	13	57	0.94	2.9	0.14–0.37
9	Nigeria	LMI	27.5	0.79	13	83	0.85	2.7	0.13–0.34
10	Bangladesh	LI	70.9	0.43	8	89	0.79	2.5	0.12–0.31
11	South Africa	UMI	12.9	2.0	12	56	0.63	2.0	0.09–0.25
12	India	LMI	187.5	0.34	3	87	0.60	1.9	0.09–0.24
13	Algeria	UMI	16.6	1.2	12	60	0.52	1.6	0.08–0.21
14	Turkey	UMI	34.0	1.77	12	18	0.49	1.5	0.07–0.19
15	Pakistan	LMI	14.6	0.79	13	88	0.48	1.5	0.07–0.19
16	Brazil	UMI	74.7	1.03	16	11	0.47	1.5	0.07–0.19
17	Burma	LI	19.0	0.44	17	89	0.46	1.4	0.07–0.18
18*	Morocco	LMI	17.3	1.46	5	68	0.31	1.0	0.05–0.12
19	North Korea	LI	17.3	0.6	9	90	0.30	1.0	0.05–0.12
20	United States	HIC	112.9	2.58	13	2	0.28	0.9	0.04–0.11

Source: Jambeck et al., 2015

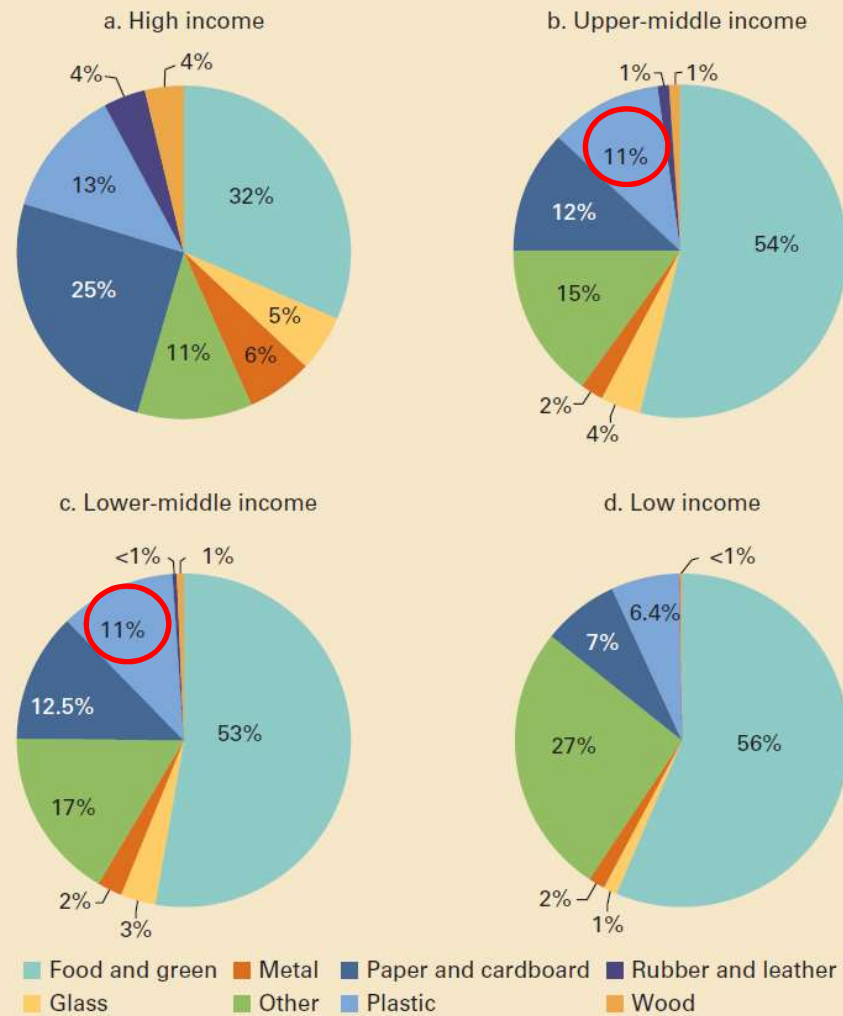
Plastic waste produced and mismanaged



Source: UNEP and GRID-Arendal (2016)

Waste collection rate

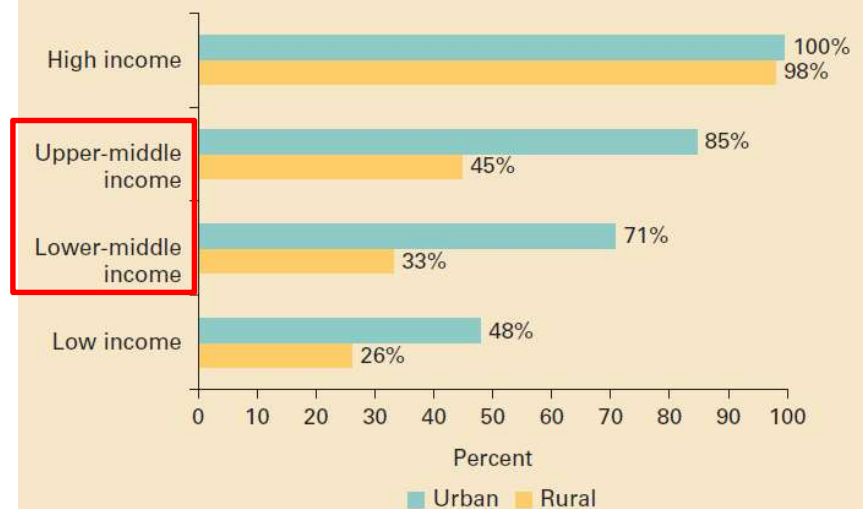
Figure 2.9 Waste Composition by Income Level
percent



a. Collection rates by income level

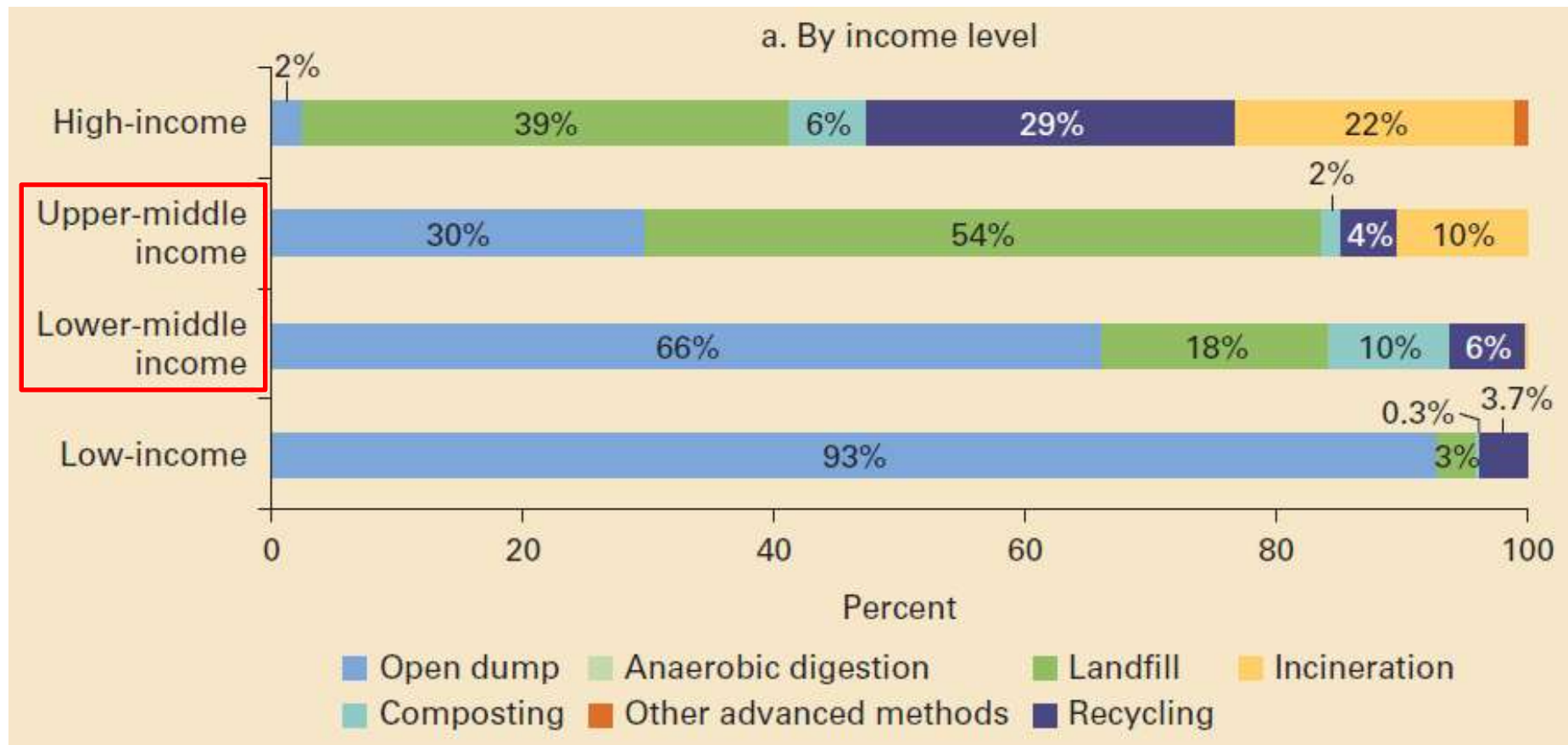


Figure 2.11 Urban and Rural Collection Rates by Income Level



Source: World Bank (2018)

Waste treatment methods



Source: World Bank (2018)

Waste Disposal at some Asian Cities



Source: Author

Informal recycling of waste plastics (Dhaka City, Bangladesh)

Shipping



Manual sorting



Recycling (pelletizing)



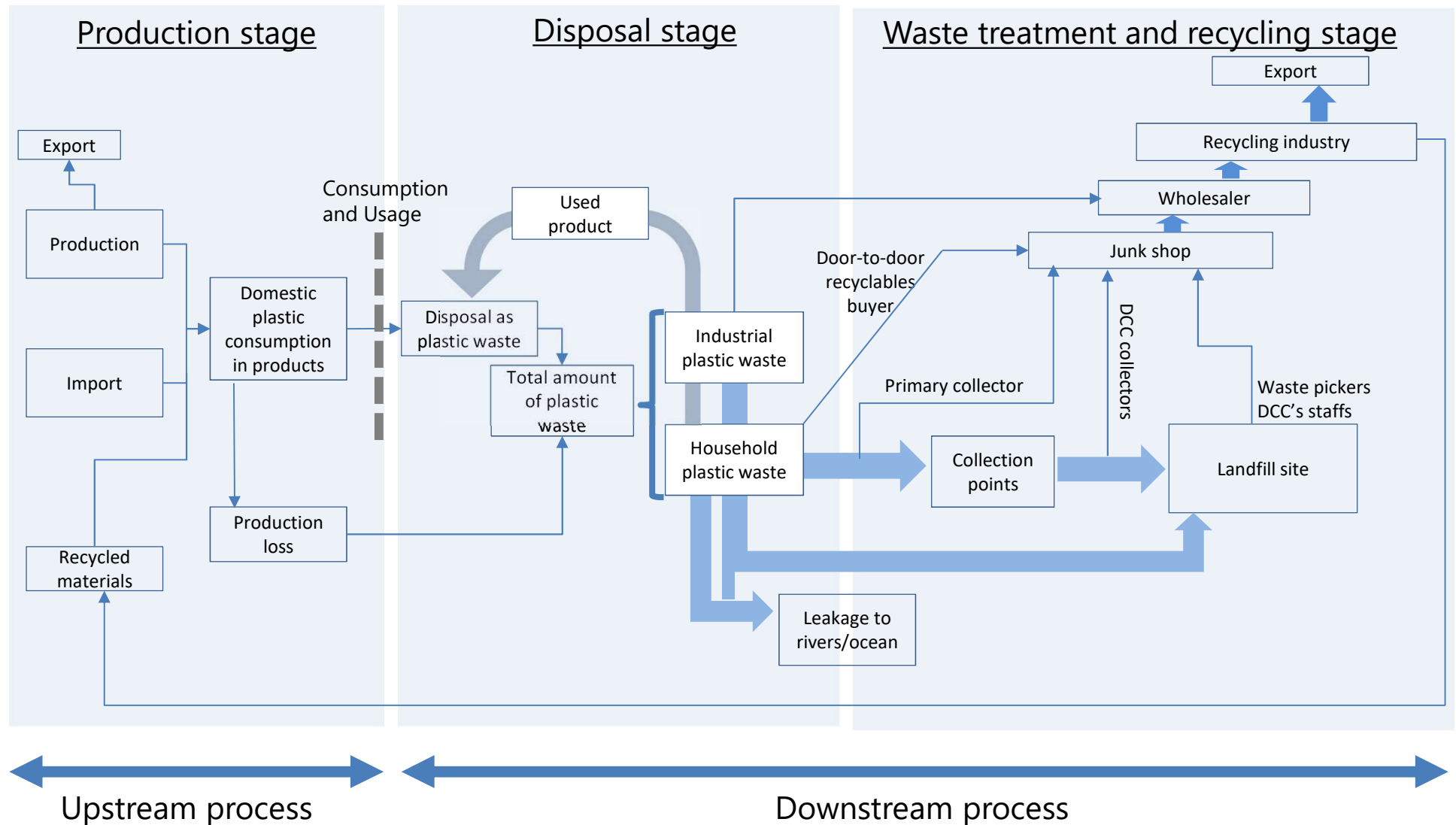
Sales at shop



Production process

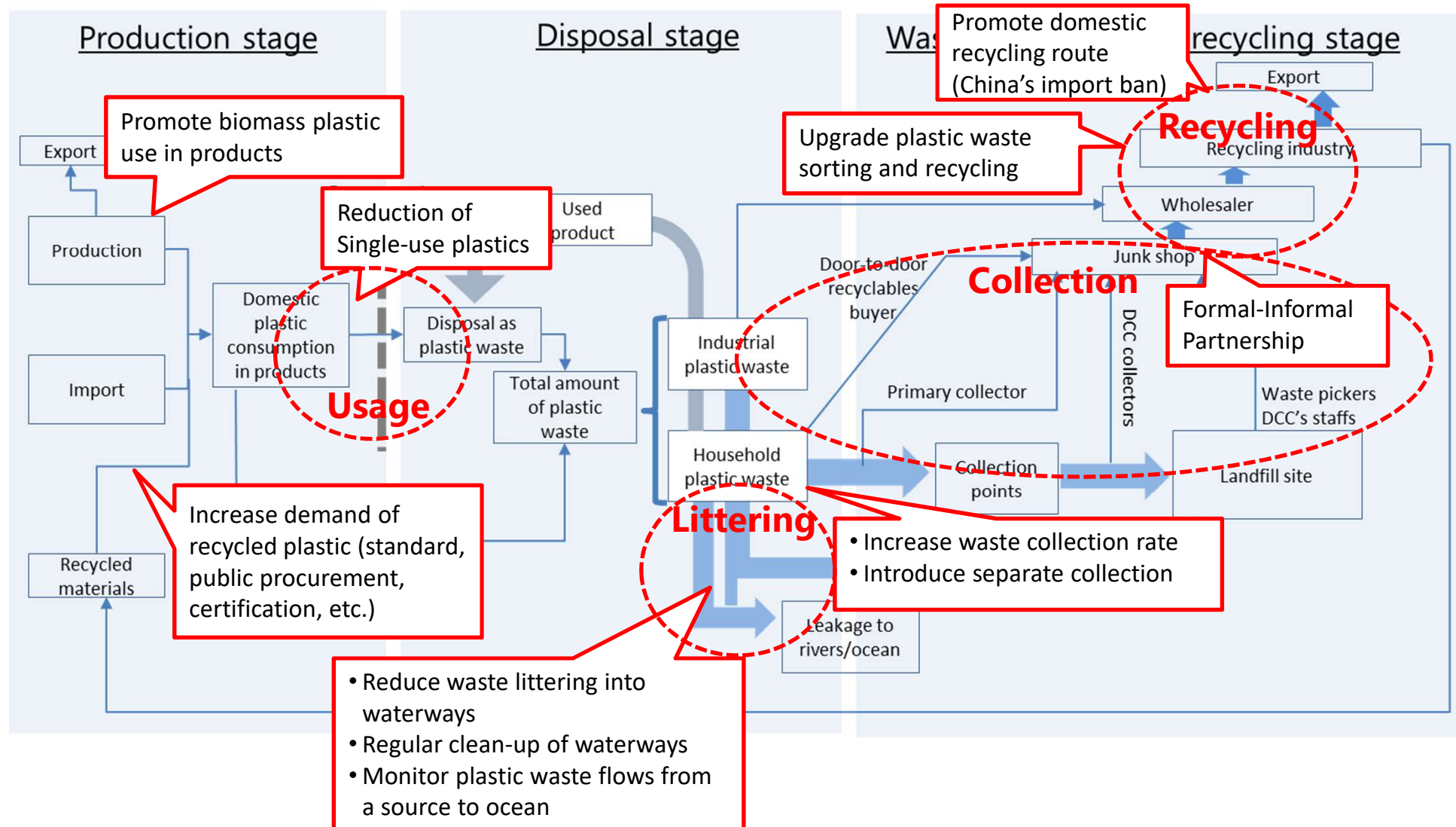


Product life-cycle of plastic materials



Product life-cycle of plastic materials and possible policy intervention

- 3 principles:
- Technological availability
 - Market demand
 - Economical feasibility



Waste/Plastic banks



<http://www.mongabay.co.id>



<http://majalahpeluang.com/pemkot-bandung-akan-masifkan-bank-sampah/>



<http://news.unair.ac.id/2018/08/02/mahasiswa-kkn-unair-inisiasi-pembentukan-bank-sampah-di-desa-bringkang-gresik/>



Feedback to members by cash or other means



Separation and deposit to waste bank



Weighing



Recording in the account book



Payment from recycling vendor (market-based)

Possible PPP scheme using a concept of EPR for plastic waste collection and recycling



New initiative using new technology for collecting waste plastics

Plastic Bank

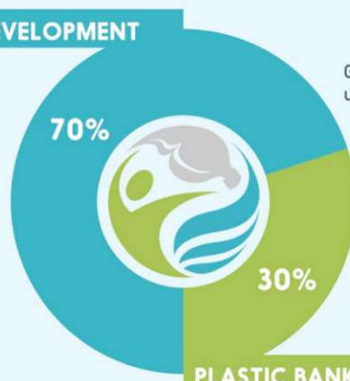
SOCIAL PLASTIC®

Social Plastic® is Plastic Bank Verified plastic that provided a premium for the collector. The premiums are called Plastic Bank Rewards. These rewards are distributed and authenticated through the Plastic Bank app which uses Blockchain technology to provide the safest and most trusted means to deliver a globally scalable social impact.



SOCIAL PLASTIC COLLECTION CREDIT

IN-COUNTRY DEVELOPMENT



\$0.44 ^{USD} /SPCC

Guarantees the collection and upcycling of 1 kg plastic waste.
= ~1¢ per plastic bottle recycled

PLASTIC BANK OPERATING COSTS

1 SPCC = 1kg of plastic prevented from entering the ocean
(similar to carbon credit)



plasticpay

TENTANG KAMI

UNDUH

FAQ

DAFTAR

MASUK

Plasticpay

SELAMAT DATANG DI PLASTICPAY

Reduce **Waste**,
Get **Rewarded**.

Tukarkan botol plastik anda dengan Plasticpay Point untuk menciptakan lingkungan yang lebih baik.

UNDUH SEKARANG



Thank you.