THROWING AWAY THE THROW-AWAY CULTURE TOOLKIT

SAHABAT ALAM MALAYSIA

Throwing Away the Throw-Away Culture

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WELCOME

to the Throwing Away the Throw-Away Culture Toolkit!

If you are reading this, it means you are one step closer to achieving a sustainable plastic-free lifestyle. We thank you for your initiative!

This toolkit is split into three sections. If you are new to the idea of sustainability, we recommend going in order.

SECTIONS:

(1) EDUCATION

Expand your knowledge on plastic wastes and plastic pollution.

(2) PLASTIC AUDIT

Understand your own plastic waste patterns at home.

(3) ZERO WASTE

Adjust your lifestyle as an individual or a small business owner to become more sustainable.

OBJECTIVES

- To build an understanding of plastic wastes, plastic pollution, and the current waste stream in Malaysia
- To comprehend the severity and urgency of the plastic crisis
- To learn how to carry out a plastic audit at home
- To recognise harmful patterns of waste generation
- To reduce plastic waste generation in everyday life and make sustainable substitutions

CONTENTS

SECTION 1:
EDUCATION

Expand your knowledge on plastic wastes and plastic pollution

Introduction to plastic pollution

WHAT ARE PLASTICS?

Plastics are composed of **polymers and additives** which enhance or give character to plastics, physically and chemically. Some of these additives are highly toxic.

WHAT'S THE BIG DEAL?

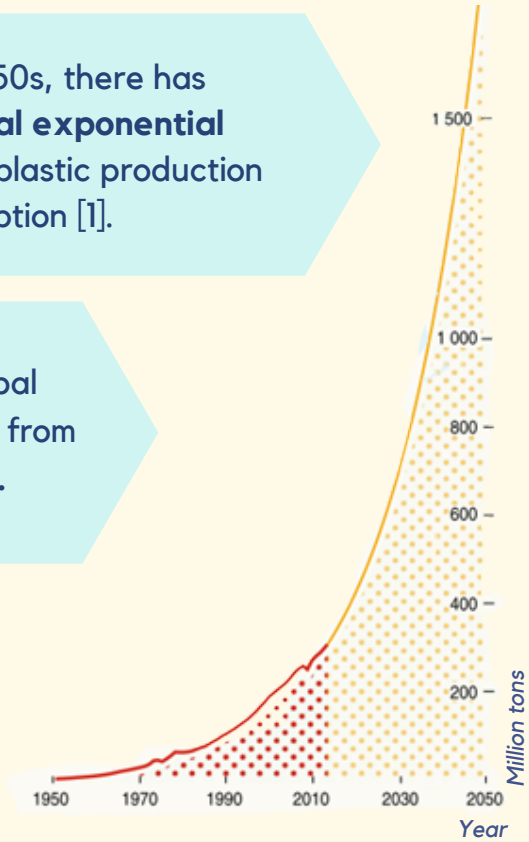
Plastics are affordable, lightweight, and durable, making them versatile. However, these same characteristics have **cultivated a "throw-away culture"** that is harmful to the environment and all living things on Earth.

THE BIG BOOM!

Since the 1950s, there has been a **global exponential increase** in plastic production and consumption [1].

Between 1950 and 2018, global plastic production escalated from **1.7 to 360 million tonnes** [2].

In the **next two decades** as economies continue to expand, especially within developing countries, global plastic production is expected to **double,** and in the **next three decades**, **quadruple** [1].



Global plastic production and future trends
Source: [45] Gallo et. al (2018)

SINGLE-USE PLASTICS

The rise in production in recent years is due in part to a **shift from durable to single-use plastics** (**SUPs**) as a result of greater demand. In fact, SUPs accounted for **half of total plastic production in 2018** [1], and SUP **packaging** alone represented **over a quarter of the total volume** of plastics used [3].

Examples of SUPs include:

- **water bottles and containers** made from polyethylene terephthalates (PETE)
- **shopping bags and shampoo bottles** made from high density polyethylene (HDPE)
- **potato chip bags and straws** made from polypropylene (PP)
- **protective packaging, plates, and cups** made of polystyrene (PS)
- **medical wastes**, such as plastic PPEs and disposable masks, of which a surge in generation has occurred since the dawn of the COVID-19 pandemic

Lifecycle of Plastics

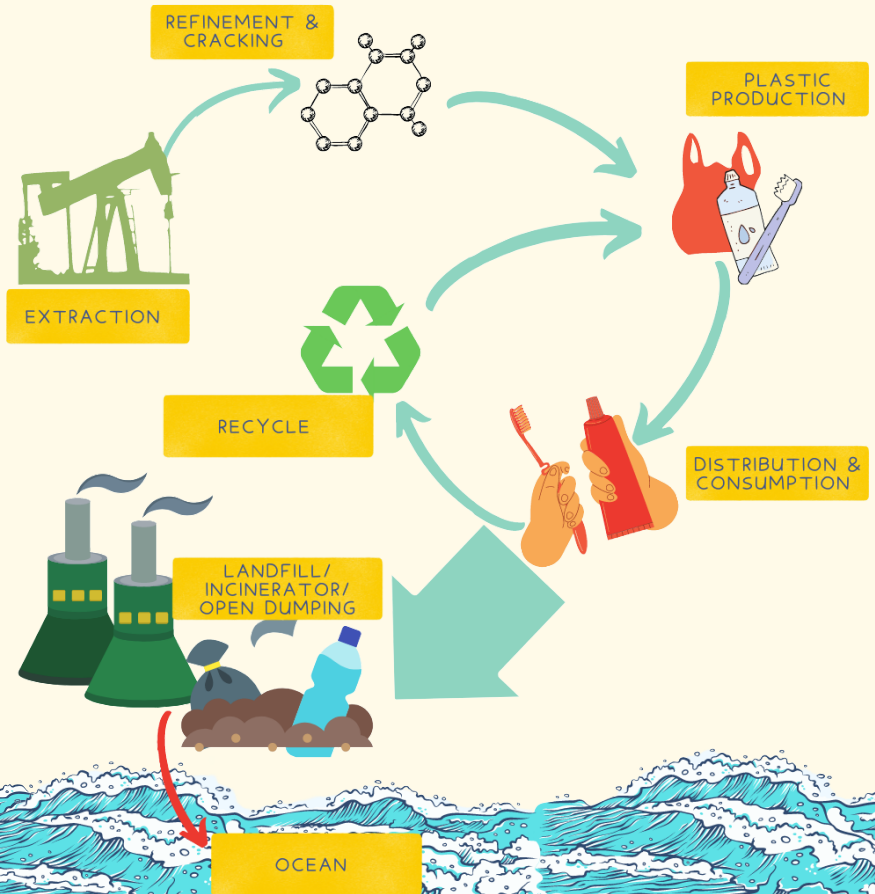
Before we dive further into the problems created by plastics, understanding their lifecycle is crucial as it is the root of the problem.

1 EXTRACTION

Extraction of crude oil and natural gas through mining and drilling of buried resources [4].

2 REFINEMENT & CRACKING

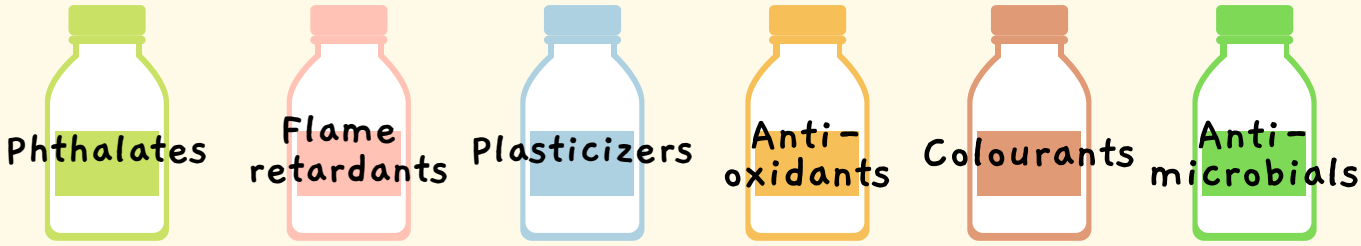
Processing in refineries and crackers transforms the feedstock into polymers [4].



3 PLASTIC PRODUCTION

- Building blocks undergo polymerization to produce 2 plastic types i.e. thermoplastics and thermosets.
- Thermoplastics are plastics that **can be melted and reformed,** which is crucial in recycling processes
- Thermosets cannot be reheated hence, **aren't recyclable**.
- Chemical additives are added to plastic for character e.g. flexibility [5].

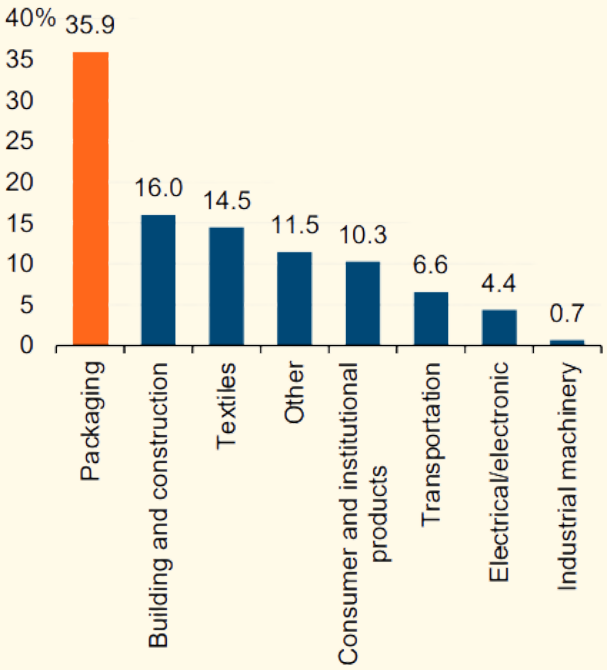
Some examples of additives [6]:



4 DISTRIBUTION & CONSUMPTION

Since 1950, approximately 9.2 billion tons of plastics have been produced, of which **40% are single-use products** [7].

Global Plastic use, 2018

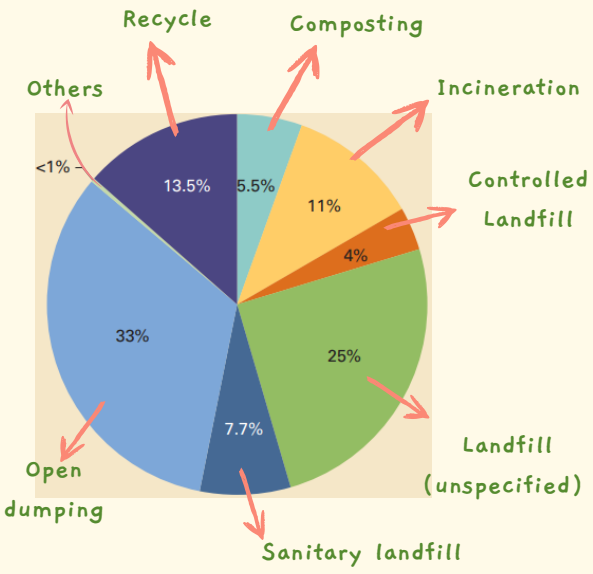


Source: [15] Kin Wong Ee, J. A. F. (2019).

5 WASTE MANAGEMENT

- Once plastics get disposed of, they either get recycled, incinerated, landfilled or are mismanaged
- Unlike the myth we're always told, **globally, only 14% of plastics get collected and recycled** and the remaining are sent to landfills and incinerators.
- In between recycling processes, **4% of plastics are reportedly lost.**
- Plastics sent to landfills, incinerated or mismanaged have negative impacts on the environment, society and economy due to their toxicity, duration to decompose and form of decomposition i.e. micro and nanoplastics.
- Mismanaged plastics have the potential of leaking into oceans [4].

Global waste treatment



Source: [25] Kaza et al., (2015)

Impacts of plastics

The ocean often acts as the final receptacle of plastic wastes. These **marine plastics** travel lengthy distances for **decades up to centuries** [10].

River plastics collect from fisheries, shipping, and land plastics carried in runoff. Eighty percent of global annual plastic emissions, ranging from **0.8-2.7 million metric tons, are from 1000 urban rivers in the world** [9].

Land plastics accumulate from various sources due to improper waste management. About **60% of all plastics ever produced end up in landfills or as trash** in the natural environment [9].

ON THE ENVIRONMENT

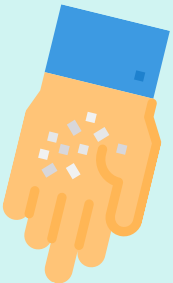
Plastic wastes can be found on **land** and within **freshwater bodies** and **oceans**.

Plastic wastes are **ubiquitous** and **persistent** within our environment. Not only are they found washed up on shores and swirling within ocean gyres, they have also been **detected within deep-sea sediments and Arctic sea ice [8]!**

Plastics are made from fossil fuels, and plastic wastes disposed of in landfills **microbially degrade.** This produces **greenhouse gases** such as carbon dioxide and methane, which pollute the air and trap in heat, contributing directly to climate change.

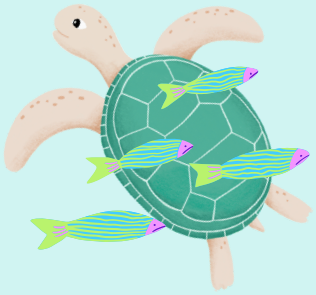
When **incinerated**, plastics release **toxic fumes** as well as **soot and ashes** which can settle on and react with soil and water and be absorbed by plants [11].

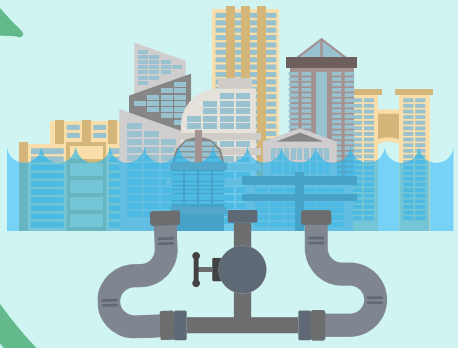
Instead of completely decomposing over hundreds and thousands of years, plastic wastes merely **degrade** into very small fragments called **micro- and nano-plastics**. High volume-to-surface area ratios amplify their contamination potential; they **leach toxins** efficiently, and **sorb harmful chemicals** from their surroundings [12].



Plastic wastes can **leach toxic chemicals** in their makeup and percolate into soil and groundwater [10].

Plastic wastes **cause global physical harm and injury** [13]. Many animals **ingest** plastics by mistaking them for food and can become **entangled** in or **smothered** by them. Consequences include starvation, stomach perforation, and overall stress, which **negatively impacts their mortality, behavior, and reproductive capacity** [1].

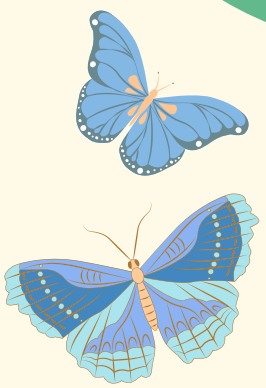


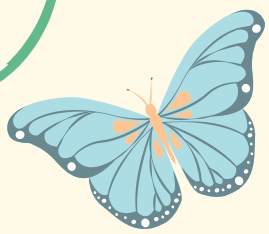


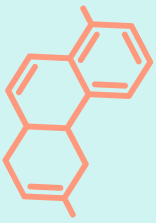
Plastic wastes clog drainage systems of urban areas, **causing floods** during heavy rainfall and unsanitary **sewage overflow**. Floods damage property and affect human lives, and the overflow of dirty water breeds bacteria and spreads diseases.

ON ALL INHABITANTS

Plastics **threaten** the **health and wellbeing** of all organisms on Earth, thus **lowering biodiversity**. Plastics and their associated chemicals have been found in our air, water, and soil. They directly and indirectly **inflict harm** in various ways.

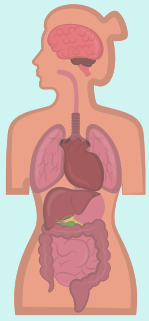




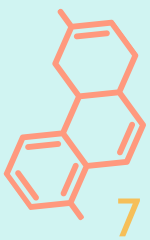


According to IPEN [10], many plastics carry **potentially toxic chemical additives and contaminants detrimental to human health**. Anytime within plastics' life cycles, chemicals can migrate from within them to the surface or directly onto a media they are in contact with.

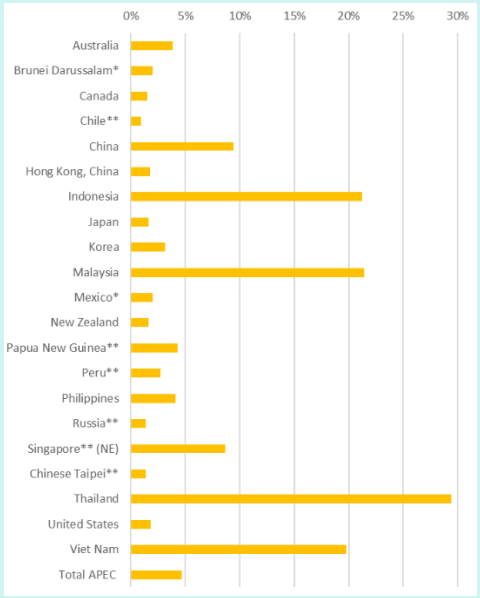
Chemicals **found in everyday items** such as **packaging and medical equipment** can directly **leach** into our foods and bloodstreams. Those present in rivers and the ocean **contaminate our water sources**. They can also be absorbed and **bioaccumulated** in the tissues of organisms, **contaminating the food chain**.



Such toxic chemicals include **persistent organic pollutants and endocrine-disrupting chemicals** which can harm our reproductive and immune systems, disturb hormone functioning, disrupt neurological development of foetuses and young children, and **cause or exacerbate health conditions** such as cancer, diabetes, obesity, and cardiovascular diseases.



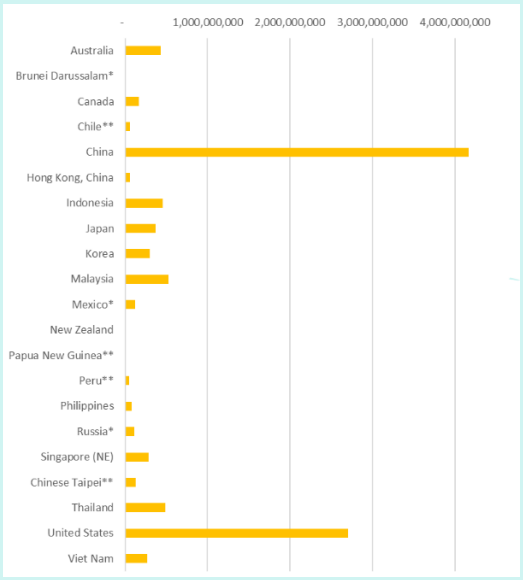
A report by the Asia Pacific Economic Cooperation (APEC) [14], consisting of 21 member countries, found that **in 2015 the APEC region had an estimated marine economy GDP of US$2.06 trillion**.



Source: [14] Asia-Pacific Economic Cooperation (APEC)

Marine economy as percentage of APEC member economy GDP

APEC also found that in the same year, **damage per year to marine industries** by marine debris, of which 80% is plastic waste, was approximately **US$10.8 billion**, eight times the amount in 2009.



Source:[14] Asia-Pacific Economic Cooperation (APEC)

Predicted cost (US$) of marine debris damage in APEC member economies in 2015

ON THE MARINE ECONOMY

Plastic wastes cause devastating impacts to the **marine economy**, which consists of marine industries such as **fishing, aquaculture, shipping, transportation, and tourism**.

Total damage to the marine economy = **direct** + **remediation** + **indirect costs**

Direct damage costs

reduced aesthetic and amenity values

increased marine accidents

overall human endangerment

transportation damage

less tourist visits

less activity participation

Remediation costs

marine debris clean-ups

Indirect costs

less leisure benefits

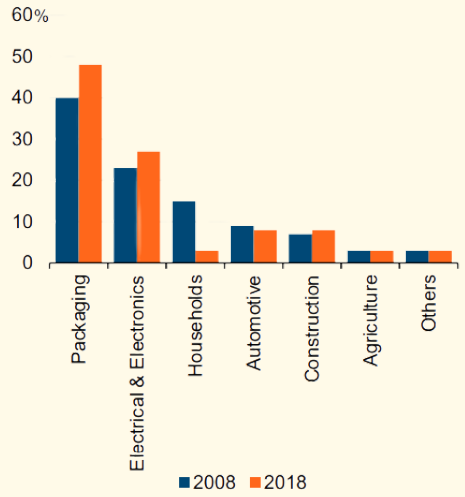
increased risk of coral diseases

lower human welfare

Pollution scene in Malaysia

Plastic manufacturing first started in the 1970s in Malaysia and has since boomed into one of the largest industries in the world with 1300 plastic manufacturers [11], **contributing 4.7% of the country's GDP**. The industry consists of 7 main sectors: agriculture, household, packaging, construction, electronics, automotive and other sub-sectors including furniture and medical devices. **Packaging makes up the largest sector in Malaysia** [15].

Market share of plastic in major market segments in Malaysia, 2008 and 2018

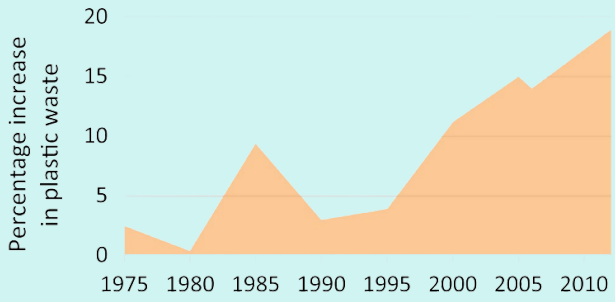


Source: [15] Kin Wong Ee, J. A. F. (2019).

- Malaysians have the highest **annual per capita plastic use with 16.78kg per person** and have the second-highest percentage of plastic generation in Asia [17].
- Malaysians on average generate **38,142 tons of waste daily** in 2018, of which 20% are plastics [16].

- Plastic consumption and production **increased from 19% of municipal solid waste (MSW) in 2007 to 24.8% in 2019**, excluding some disposable items that consist of plastics i.e. disposable diapers and textiles [16].
- There are **0.94 million tons of mismanaged waste annually,** of which **0.14 to 0.37 million tons** have escaped into the ocean [11]

Plastic waste generation in Malaysia from 1975 to 2012



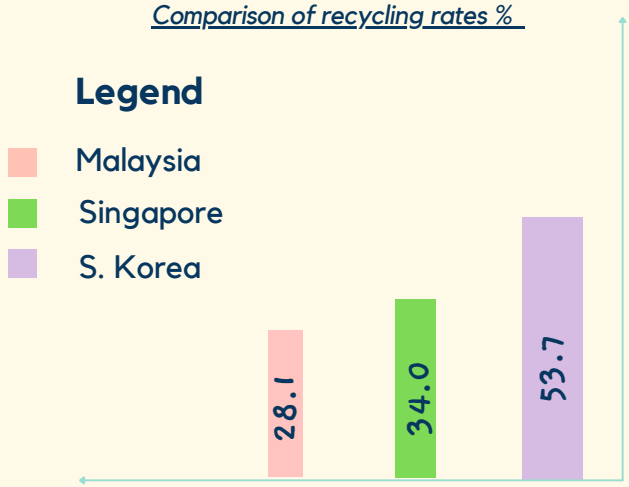
Source: [11] Chen et al., 2021

Waste Management

Malaysia isn't equipped with proper waste management infrastructure. The majority of plastics are sent to landfills.

Only **28.1% of plastics are recycled**. Some plastics are lost from collection systems or purposely dumped in the open, directly polluting the land, rivers, lakes, and the ocean [18].

Comparison of recycling rates %



Source: [18] Mahidin, D. S. D. M. U. (2020).

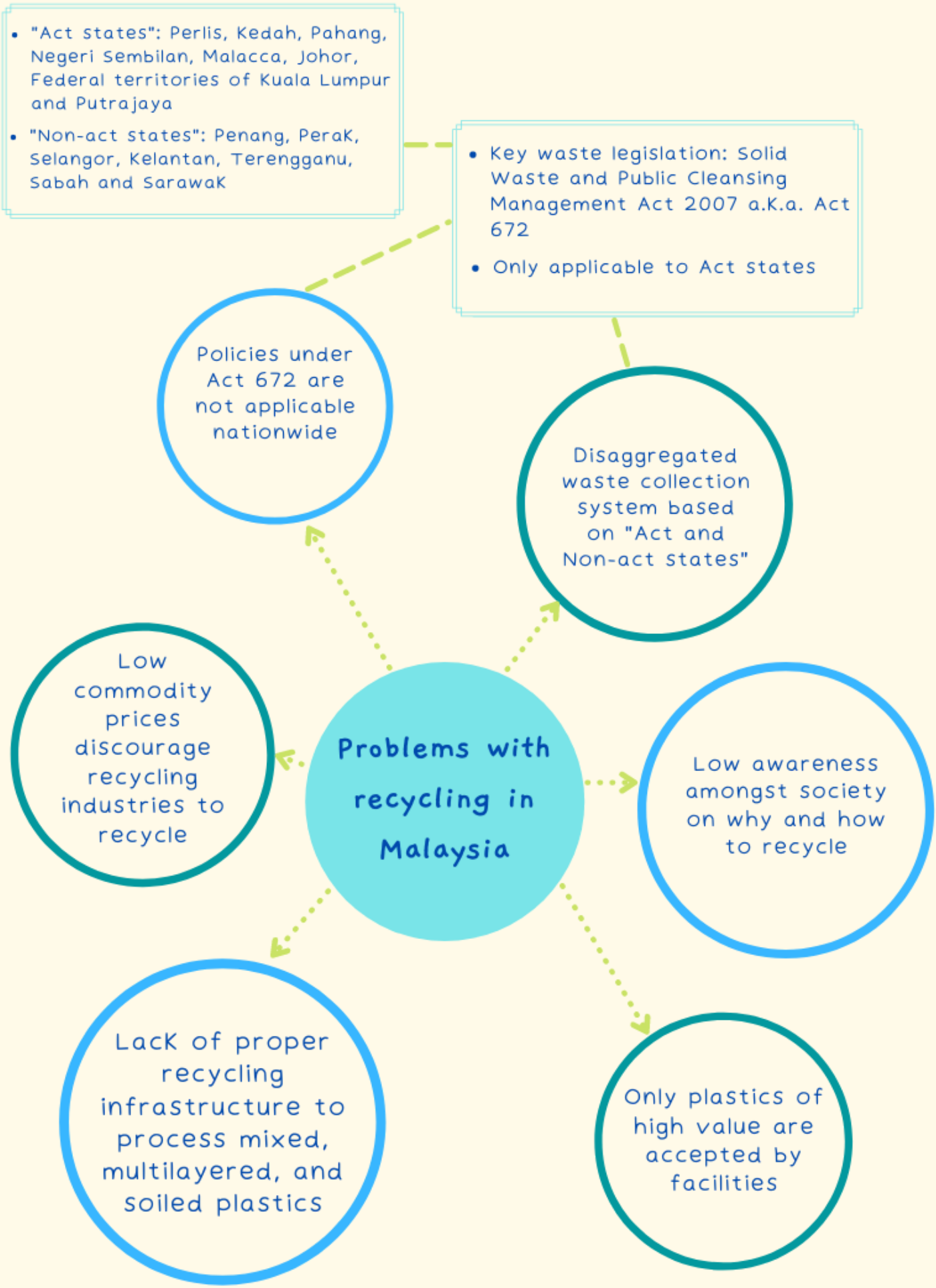
Recycling in Malaysia

- Only plastics type 1,2 and 5 are accepted by majority of recycling facilities in Malaysia [17].
- The local recycling industry tends to utilise its resources on plastics that are **easily retrievable and of high value**. Low-value plastics used in food manufacturing are rarely recycled.
- Companies tend to opt for virgin plastics with a higher value or imported plastics [11].

CATEGORIES OF PLASTIC

NO	CATEGORY	PRODUCT OF USES	RECYCLABLE IN MALAYSIA
1.	Polyethylene terephthalate (PET/PETE)	Mineral water bottles, Cookie jars	Yes
2.	High-Density Polyethylene (HDPE)	Milk containers, Buckets, Shampoo bottles	Yes
3.	Polyvinyl Chloride (PVC)	Pipes, Synthetic leather	No
4.	Low-Density Polyethylene (LDPE)	Bubble-wraps, Plastic bags	No
5.	Polypropylene (PP)	Disposable food containers, Bottle caps	Yes
6.	Polystyrene (PS)	Disposable cups, Plates, Cutlery	No
7.	Others	Miscellaneous plastic, Nylon	No

Source: [15] (Kin Wong Ee, 2019)



Information adapted from [11], [16], [18].

Plastic waste trade

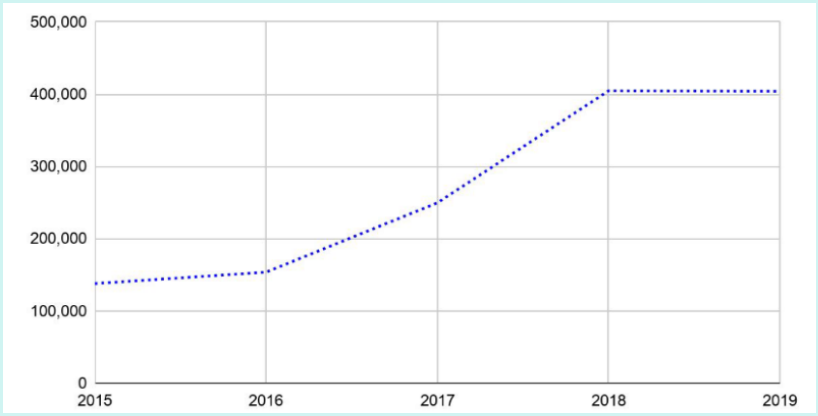
AFTEREFFECTS OF CHINA'S BAN

Since **China's ban on plastic waste imports, Malaysia and other Southeast Asian countries have ascended as the top importers** of plastic wastes. In 2018, Malaysia was the number one plastic wastes importer [19]. Developed countries such as the US and UK export to developing countries despite having sufficient waste management infrastructures as **processing fees are relatively lower in developing countries**.

MALAYSIA CANNOT COPE

Not only must we contend with our own wastes, but also that of our exporters. Furthermore, **imported wastes** are often **illegal, mislabeled, contaminated, or of lower grades**, which **prevents them from being recycled**.

EU28 Plastic waste exports to Malaysia (in tons)



Source: [19] Zero Waste Europe

There have been improvements in the management of imported wastes in Malaysia. For example, in April 2021, the Malaysian government announced it successfully identified and sent 300 shipping containers of illegal waste back to our exporters [20]. Moreover, **amendments made to the Basel Convention** on the Control of Transboundary Movements of Hazardous Wastes and their Disposal in 2019 have also helped **improve the transparency and regulation** of imported plastic wastes. These are admirable steps forward, **though there remain significant loopholes in the Basel Convention** and the waste trade overall.

Into the Future with Plastics

The Plasticine Epoch

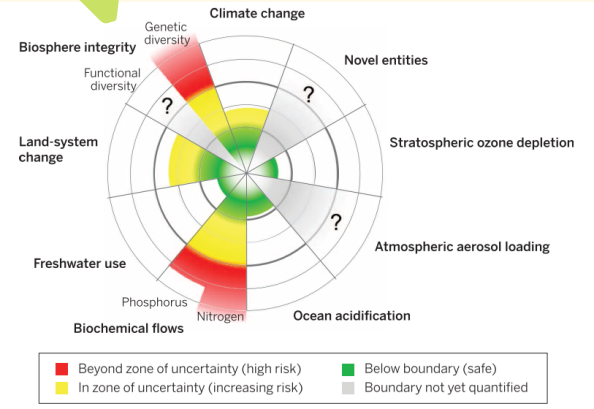
Plastics have been suggested as a **potential geological marker** for the current geological epoch known as the "Anthropocene". Geologists have coined an alternative name for this epoch, the **"Plasticine epoch"**. A new unique rock was recently discovered known as **"plastiglomerates"** formed by melted plastics from beaches. This rock composition comprises plastic, beach sediments, basaltic lava fragments and organic debris [21].

Figure above shows Plastoglomerates

Source: [21] Ross, N. (2018).

Planetary Boundaries

There has also been plenty of discussion on plastics as a **threat to core planetary boundaries: biosphere integrity and climate change** [22]. Evidence clearly shows that **plastic wastes and their associated chemicals are ubiquitous, irreversible, and have dire consequences on ecological communities and ecosystem functions**. Should the situation worsen, plastic wastes **may grow capable of disrupting vital Earth system processes**.



Source: [23] Steffen et. al (2015)

This might make you wonder how Earth would look in the future. Is there hope for the Earth and its living inhabitants to survive this crisis? The scenarios below are models from a study done by Lebreton & Andrady et.al (2019). Only two scenarios are included [24].

Business as usual

- A scenario where plastic consumption and production stay consistent like today.

Annual rate of microplastics:
increased by 2.6-fold

Annual microplastics leakage from land into aquatic systems and terrestrial systems:
increased by 2.8-fold

Systemic change scenario

- A scenario where current governmental policies and industrial commitments are implemented along with rethinking and redesigning of a circular economy

Annual combined terrestrial and aquatic pollution rates achieved in 2040:
declined by 78%

Has the lowest waste management cost, **18% lower relative to BAU**

The study stated that a delay of 5 years would add 300Mt of mismanaged plastic waste. Further delays would add up more plastics in the environment.

As for exports of waste to upper and lower-middle-income countries, the net amount exported is expected to grow from 2.7Mtyr-1 in 2016 to 3.8Mtyr-1 in 2040 under BAU. Although a small increase, it will still have huge consequences on the environment, economy, and society of recipient countries due to insufficient capacity to manage waste.

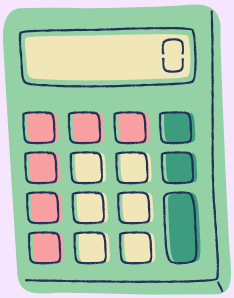
Hence, **it is very important that we switch our lifestyle practices to a plastic-free one** and push corporations, industries, and governments to implement current commitments at its fullest potential and rethink and **redesign the economy into a circular one**.

Section 2:
PLASTIC AUDIT

Understand your own plastic waste patterns at home!

Knowing Your Patterns

Plastic Calculator



Do you know how many plastics you've used in your lifetime? or even in 1 day? Often we're not aware of the amount we consume due to our "throw-away" culture. With auditing, you can keep track of your plastic footprint! This audit is based on United Nations Environment Programme's Plastic Tide Turners Challenge Badge Toolkit [26]. This audit will help you track your plastic usage. To know your plastic footprint in terms of kg, head onto this website: Plastic Footprint Calculator by Omni calculator [27]

Before auditing, you'll need to recognise plastic items of each category using the guide below.

Time to know your plastics!

PET Bottles

1 PETE

- Containers with the label 1.
- Recyclable.

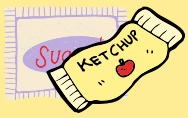
beverage bottles

food bottles (e.g. salad dressing)

Food packaging

Single-use items

Food containers



sachets

Plastic bags

Disposable containers

Bathroom/ Laundry

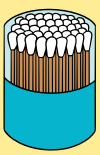
Toothpaste & brush

Dental floss

Refill packets

Disposable razor

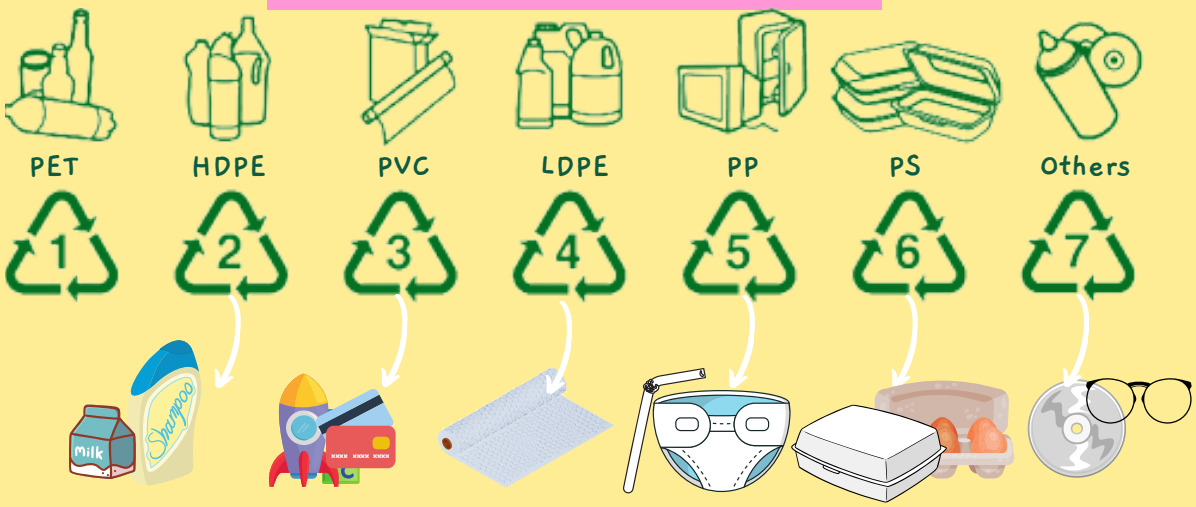
Cotton swabs



Disposable pad/tampon

Electronic waste

Other plastic types



Other than PET bottles, these plastics too, are used for packaging. Do note that not all of them are recyclable, especially type 7 [28].

Once you're familiar with the different plastic types available, create a table in a spreadsheet or in your notebook. Note down the number of plastics consumed per day and what you do with them once you're done using. Do you discard, recycle or reuse?

Category	Item	Number used per day	Where do they end up?	
			Recycle/ Reuse	*Disposed*
Food packaging	PET Bottles			
	Plastic bags			
	Sachets/ Food wrappers			
	Food containers			
	Single-use plastics			
Bathroom/ Laundry	PET Bottles			
	Toothbrush			
	Single-use razor			
	Cotton swabs			
	Refill packets			
	Toothpastes			
	Disposable pads			
Other(s)	Polystyrene (e.g. food containers)			
	HDPE bottles			
	LDPE bottles			
	Polypropylene/ PP			
	Electronic waste			

Example

Questions to ask yourself!

1. Which category or type of plastic do you consume most?
2. What happens to the majority of plastics you've consumed? (Where do they end up)
3. Are you aware of what happens to your waste once it leaves your household?

Count your savings

By switching to reusables! Calculate your estimated savings per month or year, using the price listing below! Only a few items will be included. All prices included are average price range of respective items.

***Range of prices is depicted from news articles, websites or price surveys on the web**

Disposable	RM	Alternative - (reusable/ compostable)	Lifespan	RM
Plastic take-away container (food) ***used once**	0.15 -1.00	Reusable food container - Plastic - Stainless steel	Long-lasting depending on how you care for them. [29]	2.00 - 40.00
Paper cup with lid ***used once**	0.20 - 0.70	Reusable drinking bottle - Plastic - Glass - Stainless steel	Long-lasting depending on how you care for them. [29]	10.00 - 50.00
		Flask		20.00 - 70.00
Plastic bag ***used once**	0.20 - 1.00	Reusable bag	Long-lasting depending on how you care for them. [29]	5.00 - 25.00
Plastic toothbrush ***3 - 4 months**	1.24 - 2.90	Bamboo toothbrush (compostable)	3 - 4 months [30]	1.00 -15.00
		Miswak stick/ Kayu sugi	Can last up to 40 days, depending on its freshness. [31]	0.98 - 3.50
Plastic tube toothpaste ***used once**	8.55-12.00	Toothpaste tablets (loose) (25g - 30g)	Depending on the amount bought and amount used per wash	14.00 - 16.00
		DIY toothpaste (ingredients: coconut oil, baking soda, peppermint essential oil)	Depending on the amount you make and use every day	*based on the price of ingredients
Disposable pads ***used once**	0.19-0.60	Reusable cloth pads	5 - 7 years [32]	5.00 - 65.00
Tampons ***used once**	0.62-2.50	Menstrual cups	6 months to 10 years [33]	7.00 - 100.00
Disposable diapers ***used once**	0.34-0.82	Cloth diapers	2 to 3 years depending on care [34]	7.00 - 25.00
Plastic cling food wrap 30cm x 30 m ***used once**	3.62-3.90	Beeswax food wrap	100 times [35]	3.00 - 70.00 *depends on size
New plastic bottled shampoo 320 ml ***used once**	8.33-14.25	Bar shampoo/body soap	Depending on frequency of usage	0.90 - 35.00
New plastic bottled body soap 950 ml ***used once**	13.59-18.50	Refill services *1kg 1. Cleaning detergent 2. Dish wash 3. Liquid body soap 4. Hair shampoo 5. Laundry powder/ liquid 6. Laundry softener	Depending on frequency of usage	1. 1.80 - 21.50 2. 2.80 - 21.50 3. 5.20 - 15.00 4. 10.00 - 98.00 5. 3.80 - 30.00 6. 2.60 - 8.00
Refill packets of body soap 550 ml ***used once**	8.30-10.87			

Plastic bottled cleaning detergent 1 L	15.83-24.44			
Plastic bottled laundry detergent 2 L	14.00 - 23.50			
Plastic bottled softener 2 L	7.00 - 17.00			

It takes some time for your savings to be noticeable when switching to reusable. It does not mean it's a negative thing, in fact, your savings pile up even more within the timespan! To see the amount you could save throughout the usage of a particular product, use the formula below: -

Savings =(price of disposable x lifespan of alternative (in days)) - (price of alternative)

Example

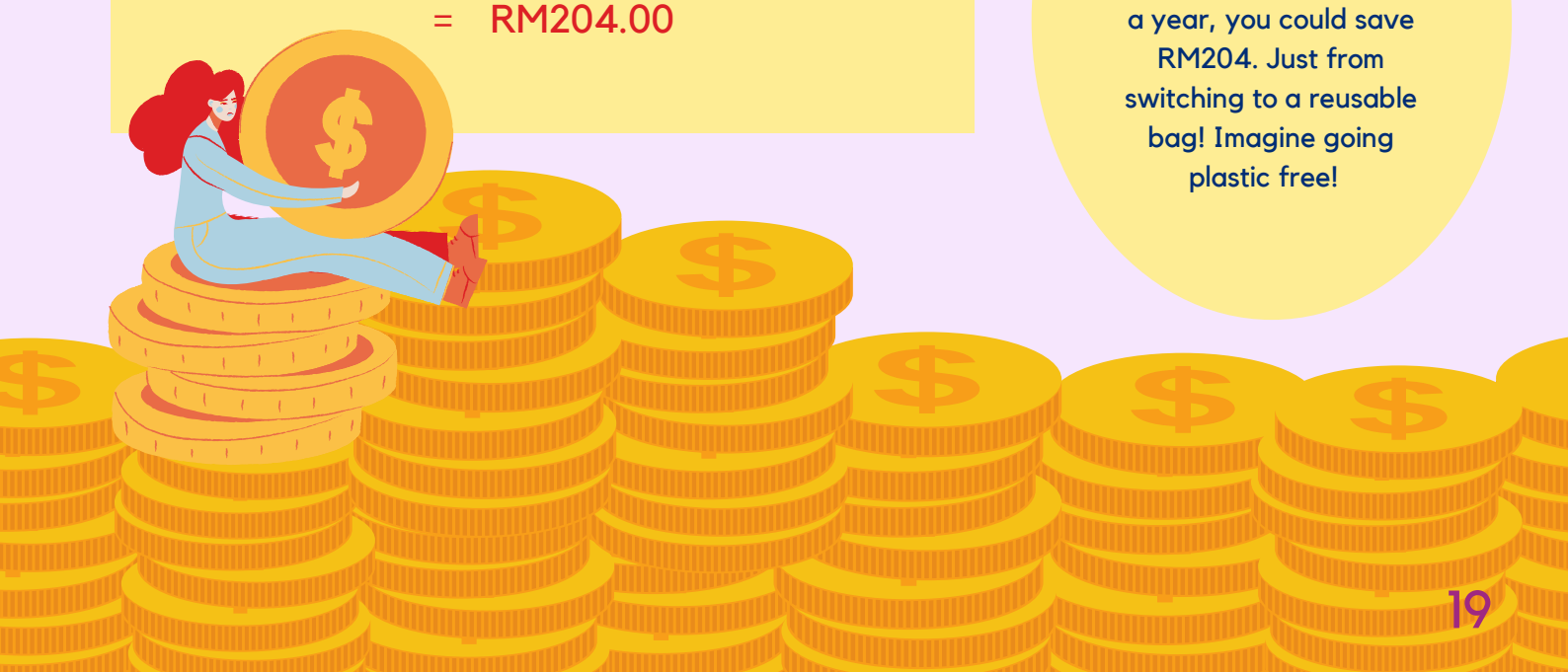
Savings from reusable bag

= (RM 0.60 x 365)(RM 15)

= 219 - 15

= RM204.00

The average price of a plastic bag & a reusable bag is used to calculate your savings in a year. In a year, you could save RM204. Just from switching to a reusable bag! Imagine going plastic free!



Section 3:
GOING ZERO WASTE

Adjust your lifestyle as an individual or a small business owner to become more sustainable!

Going From Zero to Hero!

Introduction to Zero Waste

WHAT DOES ZERO WASTE MEAN?

Zero waste is inherently linked to living a plastic-free life

It is all about **waste prevention**, and we know prevention is the best cure! The goal is to ensure no more waste ends up in landfills or as litter polluting our environment. It's based on the 7Rs: **Rethink, Refuse, Reduce, Reuse, Repurpose, Recycle**, Rot. This section will focus on **tackling the first six Rs.**

SHIFT TO CIRCULAR ECONOMY

A circular economy aims to **recover and reuse resources while reducing waste**. On a large scale, this will require sustainable long-term solutions, especially by **large companies** [36]. This includes changing product design, production, and delivery to be reusable and sustainable.

Meanwhile, smaller but mighty **changes can be made by individuals and small business owners such as yourself,** as shown in this section!

Need more convincing? Here are some of the positive outcomes of YOUR DECISION to switch to reusables and going plastic-free!

BENEFITS OF GOING PLASTIC-FREE [37]

- Prevent waste
- Prevent plastic pollution
- Protect climate by saving energy
- Save water
- Save both businesses and consumers money in the long run
- Boost economy by creating jobs (manual labor such as dishwashing)

Leading a plastic-free life

For individuals

Now that you're aware of your plastic footprint, it's time to transition into a plastic-free life! This section will guide individuals to live plastic-free! The methods are adapted according to zero waste principles [38].

Rules to plastic-free

Rethink · Reduce · Refuse · Recycle · Reuse

When going plastic-free, it is important to utilise what you already have and avoid unnecessary purchases of new items. **Rethink** on how you can **reuse** the items you already have at home! Find ways to save the plastics you already have from ending up in landfills or incinerators.

Examples

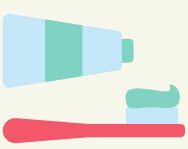
Reuse your plastic bags as a mesh bag for fruits & vegetables when grocery shopping.

Reuse your jam jars to store food, as a flower vase or even as a mug!

Reuse your plastic egg carton as a greenhouse for gardening!

Opt for reusable items during your next shopping trip and **refuse** any plastic items especially disposable ones. Switch to reusable alternatives. Switching to reusable isn't just beneficial to the environment but also to your bank account!

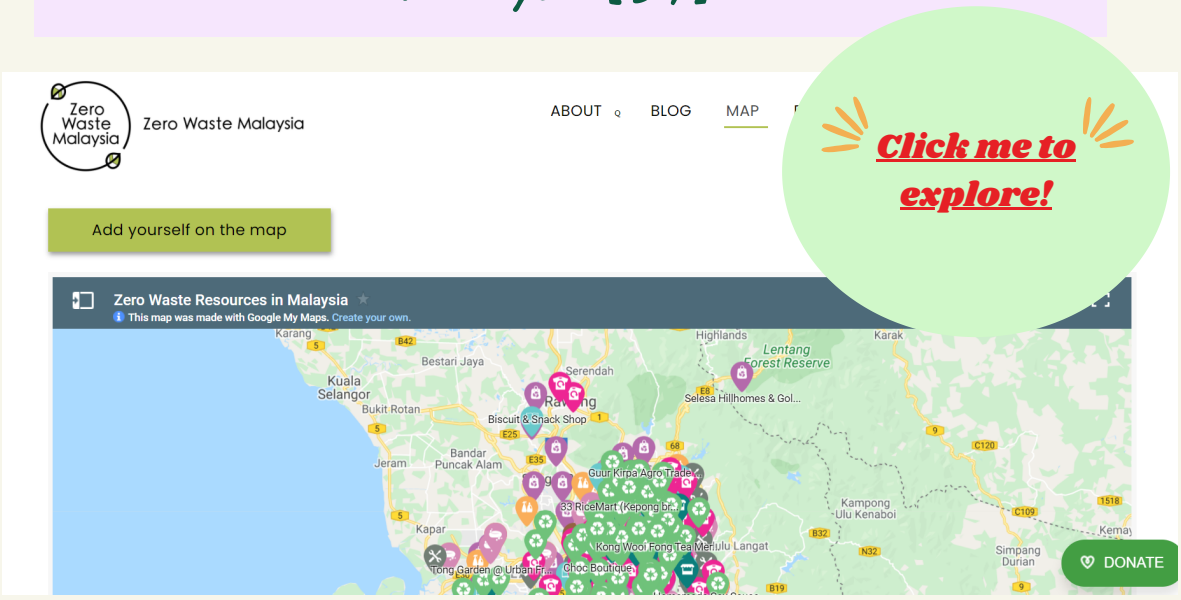
Examples

Disposable		Reusable
Plastic bags	→	 Cloth bags
 Disposable menstrual pads	→	 Cloth menstrual pads/ menstrual cups
 Shampoo and soap bottles	→	 Bar soap for hair and body
 Disposable take-out containers	→	 Reusable containers
 Plastic toothbrush & toothpaste tube	→	 Bamboo toothbrush/ Miswak & toothpaste tablets/ DIY toothpaste
 Food plastic cling wrap	→	 Bees wax food wrap

It is a bit hard to avoid plastics at supermarkets as most of the items are already packaged. To shop plastic-free, you can shop your items from:

Some worry that purchasing from zero waste stores may be pricey, fret not! **There are local stores that sell food in bulk at affordable prices** but aren't necessarily labelled as a "zero waste store". The map below may guide you to stores nearby your area. Remember to bring your containers!

Zero Waste Resources Map by Zero Waste Malaysia[39]



Practising **rethink**, **reuse** and **refuse** are great ways to **reduce** your plastic footprint!

If you end up in situations where you can't do anything with the plastics using the 3 concepts, you can opt to **recycle** the plastics. This should only be done if the 3 concepts can't be avoided!

Note that **not all plastics are recyclable**!

Recycling the proper way!

1. **Know your plastics!** Differentiate between recyclable & non-recyclable plastics.

Plastic types accepted by local recycling facilities in Malaysia i.e. **PETE/PET, HDPE & PP** [11, 15].
Mixed plastics i.e. plastics of multiple types or plastics mixed with other materials are seldom accepted.

2. **Clean your plastics!** Plastics contaminated with food stains, oil or grease are rejected by facilities & are sent to landfills [40].

3. **Sort your plastics!** Make sure you separate your recyclables [40].

These steps are applicable to all recyclable materials!

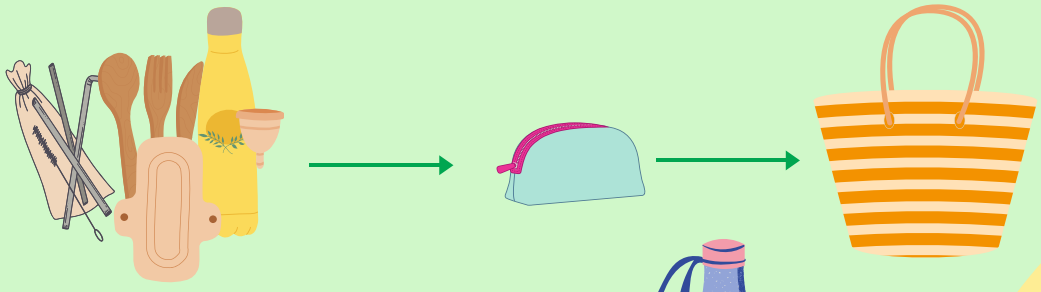
Remember that recycling **isn't a gateway for you to consume more plastics**, it's for you to deal with the plastics you already have! Try to practice **refuse**, **reuse** and **rethink** to **reduce** your plastic wastes & consumption.

To do this, you'll have to **switch to reusables** & practice consistency! It's normal to forget your reusable items sometimes when you're out. Check out the tips below on how to avoid being forgetful!

Don't Forget Your Reusables! [41, 42]

1. Have a spare set of reusable bags/ containers/items in your car

2. Pre-pack your eco essentials in a small bag and keep them in your carry-on bag.



3. Keep reusable mugs/bottle at your workplace.

4. If you happen to forget your food containers, consider dining in!

For small businesses

Are you looking to reduce single-use plastics (SUP) in your small business right here in Malaysia? If so, you are in the right place. Get started by following the steps below [43]!

STEP (1)

- Write **A LIST of all SUP items** used in your business
  - **Order** the list of SUP items **from easiest** (which you can easily do without) **to the most difficult** (which you do not seem able to control using)
  - An example is given on the following page

STEP (2)

- Tackle the first few **EASIEST SUP items**
  - **Come up with alternative methods** to eliminate the SUPs through reuse
    - **Refer to helpful suggestions** on the following page!
    - Remember to consider SUPs used by both customers and staff
  - **Implement** the alternative reuse-based methods
    - **Monitor** progress (e.g. through customer and staff feedback)

STEP (3)

- **Tackle the OTHER SUP items** on the list!
  - You'll probably need to **get more creative** with alternative methods to SUPs as they become harder to eliminate
  - Remember to **engage with your local zero-waste communities and businesses**. They will likely have answers for many of the issues you will face along the way

EXAMPLE OF LIST

1. Bags
2. Bottles
3. Cups and lids
4. Straws
5. Clamshells and take-out containers
6. Wrapping (bubble and shrink wrap)
7. Plastic crates
8. Foam packaging

Easiest (can easily do without)

Most difficult (cannot seem to control using)

EXAMPLES OF REUSE-BASED ALTERNATIVES [37, 43, 44]

FOOD/RETAIL

Implement a ban!

- Beginner: do not provide straws, water bottles
- Intermediate: do not provide SUPs for take-out
- Advanced: do not allow other common packaging, e.g. wrappers on snacks

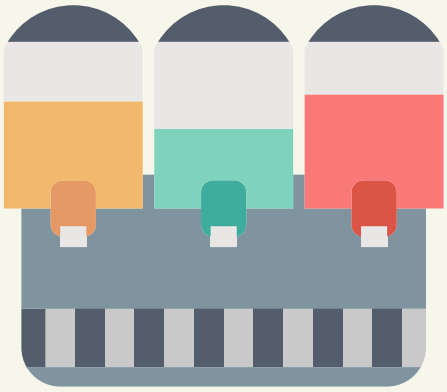
Encourage Bring Your Own (BYO) Bags and Containers

Bulk buy to reduce packaging waste, e.g. "nude" biscuits

Offer **discounts** for customers who bring their own containers

Sell reusable items with your brand name to encourage consumers to reuse

Install refill stations/dispensers and offer refill services, e.g. water dispenser



Implement a reusable to-go scheme, e.g.:

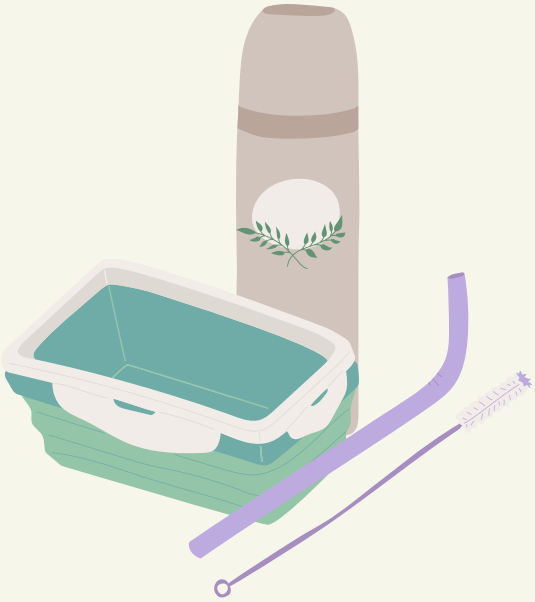
- **cup exchange** - supply cup and lid to business and swap with others, so one is always available
- **rent-a-cup** - pay an upfront deposit that is refunded once cup and lid are returned

Provide reusable items at establishment

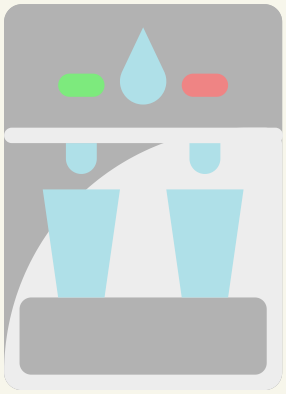
- e.g. squeeze bottles for condiments instead of sauce packets, glasses instead of disposable water bottles, jugs for water or milk to refill, stainless steel cutlery and stirrers, pots for other liquids
- **Ceramic and glass** tableware have the lowest environmental impact overall [37]

SERVICE-BASED/OFFICE

Encourage BYO and **give out free reusable items** with your brand name



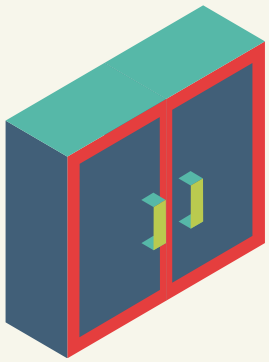
Install cooling water filters or **store jugs of water in refrigerator**



Organize plastic-free lunches, potlucks, picnics, and outings

Use plastic-free caterers for events

Overhaul snack cupboards and replace plastic-wrapped items with other alternatives, e.g. fruit



Replace balloons and other single-use decorations for events with sustainable alternatives, e.g. punch hole leaves to make green confetti

GO THE EXTRA MILE!

Carry out more **background research** before switching to any **alternative single-use materials**, e.g. bioplastics, compostables

- Do keep in mind that **the idea of "single-use" itself is unsustainable**
- The main goal is to **opt for reusable items whenever possible**

Contact your suppliers and local businesses that use SUPs **to discuss other reuse-based alternatives**, e.g.:

- request suppliers to use **traditional natural materials** for packaging whenever possible, e.g. banana leaves, coconut shells
- if not possible, **reuse packaging materials and share amongst local businesses**

Thank you

for your wonderful efforts in throwing away the throw-away culture!

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