

● PLASTICITY MALAYSIA 2018

Panel 3: **Malaysia Roadmap 2030 - What You Need to Know about Single-Use Plastic**

25 October 2018, Kuala Lumpur

It's POLLUTION, Not PLASTICS



MALAYSIAN
PLASTICS
MANUFACTURERS
ASSOCIATION

Speaker: Datuk Lim Kok Boon, President, MPMA

Mismanaged Plastics Waste and Plastic Marine Litter Pollution

- It is REAL
- It is HUGE
- It is URGENT
- The plastics industry is equally concerned about the adverse effects of plastic marine litter.
- **Having a holistic roadmap to address this issue is vital**
- The **ZERO SINGLE-USE PLASTICS** roadmap - the way forward ?

What is Single-Use Plastics (SUP)?

ROADMAP TOWARDS ZERO SINGLE-USE PLASTICS 2018-2030

INTRODUCTION



Since the 1950s, the production of plastic has outpaced that of almost every other material due to its versatility and functionality. Most of these plastics are designed to be thrown away after being used only once (single-use) which results in single-use disposable plastics waste accumulation. Only nine per cent of the nine billion tonnes of plastic the world has ever produced has been recycled. Most ends up in landfills, dumps or in the open environment¹. Single-use plastics² are plastics that are commonly used for plastic packaging, carry bags and include items intended to be used only once before they are thrown away.

Malaysia is a global player in the plastic industry with currently about 1,300 plastic manufacturers. As of 2016, our exports amounted to RM30 billion which saw a 2.26 million metric tonnes of resin utilised to produce plastics.

Environmental problems related to plastic waste have become a major problem in Malaysia where it has been ranked as 8th among the top ten countries with mismanaged plastic waste in the world. A study estimated that Malaysia had produced 0.94 million tons of mismanaged plastic wastes, of which 0.14 to 0.37 million tons may have been washed into the oceans³.

Single-use plastics are plastics that are commonly used for plastic packaging, carry bags and include items intended to be used only once before they are thrown away.

Note: Plastics in this document is referred to the conventional petroleum-based plastic.

1) UNEP (2018) SINGLE-USE PLASTICS: A Roadmap for Sustainability

2) Plastics in this document is referred to the conventional petroleum based plastic

3) Estimation of mismanaged plastic waste in Malaysia in 2010 (Jenna R. Jambeck et al. 2015)

4) APEC, 2009

What is Single-Use Plastics (SUP)?

Single-use plastics are plastics that are commonly used for plastic packaging, carry bags and include items intended to be used only once before they are thrown away.

Note: Plastics in this document is referred to the conventional fossil fuel-based plastic.

This coverage is **very wide** and will include, inter alia, the following:

- a) In the case of medical devices, it will include syringes, catheters, blood bags, saline solution bags, urine/waste bags, surgical gowns, non-latex gloves, etc.
- b) In the case of food packaging, it will include packaging for sugar, bread, rice, flour, milk powder, coffee, salt, meat, fish, etc.
- c) In the case of bottles, it will include bottles for water, beverage, sauces, cooking oil, milk, medicine, etc.
- d) In the case of general bags, it will include retail shopping bags, and also garbage bags, etc.
- e) In the case of films, it will include palletising stretch films, food wrap, etc

Is that possible/feasible/practical?

The Roadmap – MPMA's views



MALAYSIA'S ROADMAP TOWARDS ZERO SINGLE-USE PLASTICS 2018-2030

Towards a sustainable future



- The word **ZERO** can only mean that it will be totally eliminated for use - which means a "BAN"
- That means ZERO single-use plastics of ALL types by 2030
- Or effectively a BAN on ALL types of SUP

The Roadmap – MPMA's views

More than 60 countries have introduced some measures to curb single-use plastics waste such as imposing bans and levies. Some countries have imposed direct ban on single-use plastics but according to a UNEP¹ report, the bans have not been effective to curtail plastic pollution. The report also highlights other countries have taken a phased approach and in some cases, complimented with economic instruments. For example, India is planning to phase-out single-use plastics by 2022. Taiwan and European Union plan to phase-out single-use plastics by 2030.

- The above gives the impression that Taiwan and the EU mentioned are going to phase out **ALL** single-use plastics by 2030.
- Is that TRUE ?

The Roadmap – MPMA's views

Single-use plastic items	Consumption reduction	Market restriction	Product design requirement	Marking requirements	Extended producer responsibility	Separate collection objectives	Awareness raising measures
Food containers	X				X		X
Cups for beverages	X				X		X
Cotton bud sticks		X					
Cutlery, plates, stirrers, straws		X					
Sticks for balloons		X					
Balloons				X	X		X
Packets & wrappers					X		X
Beverage containers, their caps & lids - Beverage bottles			X		X		X
			X		X	X	X
Tobacco product filters					X		X
Sanitary items: - Wet wipes				X	X		X
- Sanitary towels				X			X



European Commission - Fact Sheet



Single-use plastics: New EU rules to reduce marine litter

Brussels, 28 May 2018



Lightweight plastic carrier bags					X		X
Fishing gear					X		X

- **EU** did not aim towards zero single-use plastics, but rather focus on **reducing marine litter**.
- EU targets only **12 types** of single-use plastics – **NOT ALL TYPES OF SUP**.
- **Market restriction** is only applied to **3 types** of SUP:
 - Cotton bud sticks;
 - Cutlery, plates, stirrers, straws; and
 - Sticks for balloons.

The Roadmap – MPMA's views

Action Plan of Marine Debris Governance in Taiwan¹ (1st edition)

2018 February

By the “Marine Debris Governance Platform” in Taiwan
(Environmental Protection Administration & NGO Alliance)

¹ Original text can be found [here](#) (written in Chinese)

No.	Future Actions	Lead Agency/Partner
1.1.F-1	<ul style="list-style-type: none">- Reduction or restriction of SUP(Single Use Plastic):- Announce a timeline on reducing or removing SUP (e.g. bubble tea cups, plastic straws, disposable utensils, plastic bags etc.) and steps; push for relevant policies to reduce plastics- Develop measures to promote reusable containers and utensils, and establish a reusable-friendly environment <p>*Proposed timeline to remove SUP: 4 plastic items (plastic bags, to-go cups, plastic straws and disposable utensils) will be discussed to expand the scope of restricted measures and materials in 2020 and straws will be the first to be limited in 2019. Next, there will be a charge for to-go purchases of these 4 items in 2025. In 2030, these 4 items will be totally banned.</p>	Lead: EPA Partner: NGO

- Taiwan did not aim towards zero single-use plastics too. Similar to EU, it aims to address the issue of marine litter.
- Only 4 types of SUP are included in the plan:
 - i. Plastic bags;
 - ii. To-go cups;
 - iii. Plastic straws; and
 - iv. Disposable utensils.

The Roadmap – MPMA's views

PHASE 2 2022-2025

2022:



- Widespread uptake of bio bag nationwide replacing plastic bags and sold as SKU item.
- 'No straw by default' practice continues and extended to non-fixed premises. SKU ECO001 straw (bio straw) will be introduced including straws for packet drinks.
- Expansion scope of biodegradable and compostable products:
 - ✓ Food packaging;
 - ✓ Plastic film;
 - ✓ Cutleries;
 - ✓ Food container;
 - ✓ Cotton buds;
 - ✓ Polybags and plant pots; and
 - ✓ Slow release fertilizers.

PHASE 3 2026-2030

2026 – 2030:

- Substantial increase in the volume of production of local biodegradable and compostable alternative products for local consumption.
- Expansion scope of biodegradable and compostable products:
 - ✓ Single-use medical devices (e.g. catheter);
 - ✓ Diapers & feminine hygiene product; and
 - ✓ Other single-use plastics that cannot enter the circular economy.

- **Are biodegradable products not single-use products?**
- **Will it solve the problems of marine litter ?**

Biodegradable plastics The magic bullet ?

It is **noble to look at using renewable sustainable products**. However, this decision must be **based on science**, with measurable and verifiable data on **LCA basis**.

- Will it “degrade” ?
- Is degradation “good” ?
- Will it lead to reduction in waste reduce Green House Gas ?
- Prevent litter and solve marine litter issues?
- Not harm society ? Especially the poor?

What happens to single-use plastics after use ?

- Scenario 1 - it ends up in a landfill
- Scenario 2 – it is collected for recycling
- Scenario 3 – it is discarded as litter ... ends up in the ocean

Scenario 1 – ends up in a landfill

- Proponents of biodegradable plastics wants it to “biodegrade” in a landfill.
- But, what actually happens in a landfill ?

"Biodegradable plastics" are not the Panacea to Solid Waste

Lately, the BPI and its members are seeing an increasing number of "biodegradable" claims, relating to plastic bags and other plastic items. Manufacturer claims include phrases like "biodegrades in landfills" or "reduces the impact of litter because they are biodegradable". The BPI is increasingly concerned by these claims not only in the US but also in Canada.

According to a 2006 consumer survey by the American Chemistry Council, when the term "biodegradable" is used most consumers believe that the product will go away completely and on its own in a year or less:

- *"For most people, this term means that the material is able to decompose or break down naturally (on its own)."*
- *Most people believe the material would break down in 1 year or less.*
- *One key attribute assigned to biodegradable by most people is that when it breaks down the material disappears completely - there is nothing left behind.*
 - *As a result, adults say the material is not harmful to the environment*
- *There is some sense that you can just throw out the biodegradable material and it will dissolve completely, on its own."*

Additionally, the overwhelming majority of consumers believe that these products will "biodegrade" in landfills. Yet, today's landfills are engineered to eliminate moisture and to retard biodegradation. In fact, researchers have found in landfills legible 30 year old newspapers; 5 year old lettuce and 10 year old hotdogs.

The BPI has never seen any scientific data which shows that "biodegradable" plastics will fulfill consumer's expectations under landfill conditions (i.e. breaks down completely into nothing in a 12 months or less).

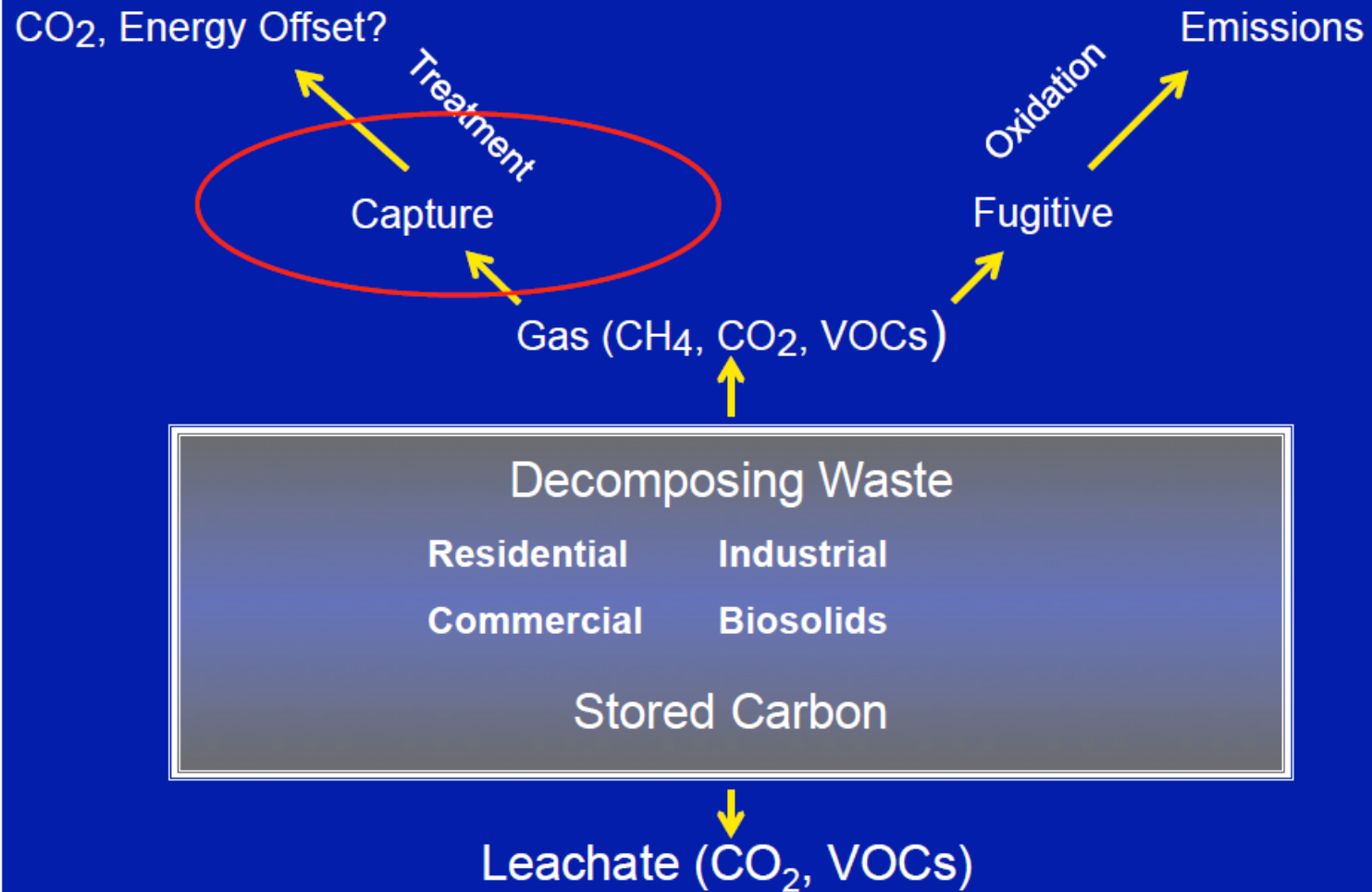
Rather than focusing on "biodegradability", the BPI and its members strongly believe that manufacturers, consumers and communities should be looking for solutions to solid waste issues that encompass source reduction, reuse and greater use of recycling and composting, all of which divert materials from landfills and incinerators. Additionally, the BPI and its members support a scientific approach, which allows a clear verification of any claims such as application of ASTM 6400 for commercial composting.

“...the overwhelming majority of consumers believe that these products will ‘biodegrade’ in landfills. Yet, **today’s landfills are engineered to eliminate moisture and to retard biodegradation.**”



This artifact was excavated (*by an I.S. 318 student 10/28/99*) at Dead Horse Bay in **Brooklyn** - this landfill has been closed for **over 40 years** and the newspaper date and condition demonstrates how slow decomposition occurs in the **absence of proper aeration**

Carbon Flow In Landfills



Leachate

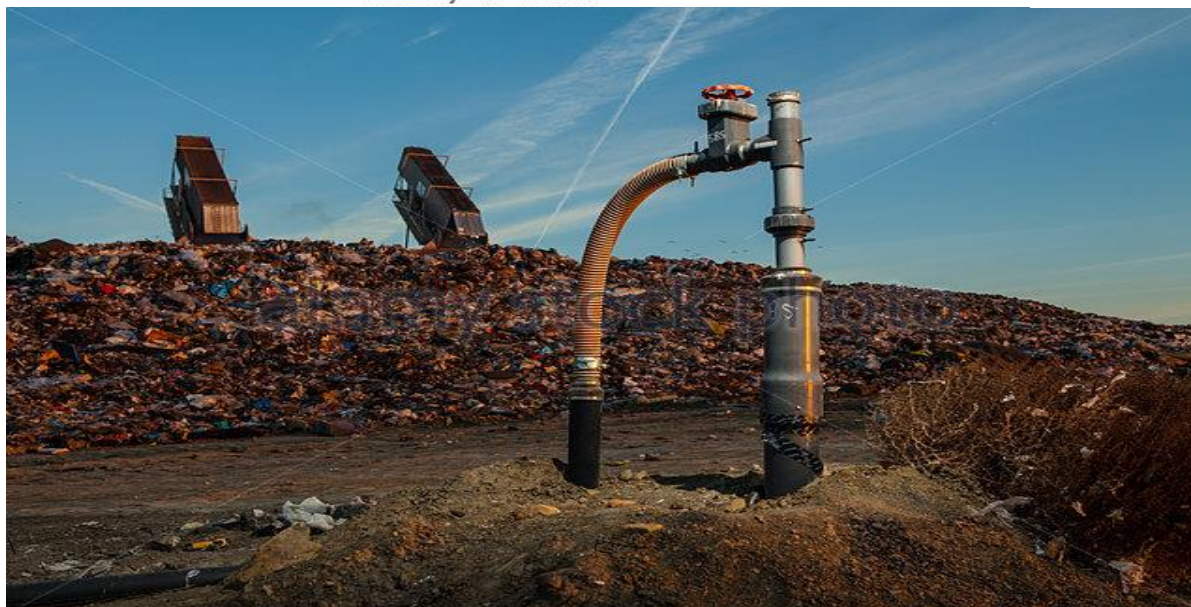




www.alamy.com - AB4H4X



www.alamy.com - AB3DAY



www.alamy.com - EAWH9A

Scenario 2 - separation for recycling/composting

- Bio-based degradable products:
 - Cannot be recycled with plastic products
 - **Has to be placed in Bin for Organic Waste / a separate Bin only for bio – for composting.**
 - **Do we currently have industrial composting facilities in Malaysia? NO**
- If no composting site, than bio waste like organic waste – ends up in a landfill
 - ❖ degradation in landfills contributes towards global warming (this is bad for the environment)
 - ❖ no reduction of waste going to landfills

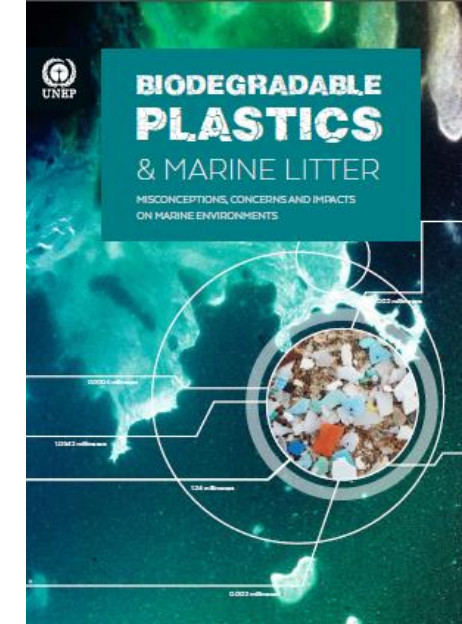
Scenario 3 – it is littered !!!

- A plastic bag or bottle, when littered, will get washed into a drain then a river, and then into the ocean ... causing the huge problem of marine litter
- But will a biodegradable plastics product solve the marine litter issue ?

- A further disadvantage of the more widespread adoption of 'biodegradable' plastics is the need to separate them from the non-biodegradable waste streams for plastic recycling to avoid compromising the quality of the final product. In addition, there is some albeit limited evidence to suggest that labelling a product as 'biodegradable' will result in a greater inclination to litter on the part of the public (GESAMP 2015).
- In conclusion, the adoption of plastic products labelled as 'biodegradable' will not bring about a significant decrease either in the quantity of plastic entering the ocean or the risk of physical and chemical impacts on the marine environment, on the balance of current scientific evidence.



Source: Biodegradable Plastics and Marine Litter, **UNEP** 2015



“...labelling a product as biodegradable will **result in a greater inclination to litter...**”

“...adoption of biodegradable plastics **will not bring significant decrease either in quantity of plastic entering the ocean or the risk of physical and chemical impacts on the marine environment**”

The Guardian Monday 23 May 2016

Biodegradable plastic 'false solution' for ocean waste problem

UN's top environmental scientist warns bottles and bags do not break down easily and sink, as report highlights the ubiquity of plastic debris in oceans

Biodegradable **plastic water bottles** and shopping bags are a false solution to the ubiquitous problem of litter in the oceans, the UN's top environmental scientist has warned.

Most plastic is extremely durable, leading to large plastic debris and "microplastics" to spread via currents to oceans from the Arctic to the Antarctic, a [UN report published on Monday](#) found.

Greener plastics that breakdown in the environment have been marketed as a sustainable alternative that could reduce the vast amount of plastic waste that ends up in the sea after being dumped. But **Jacqueline McGlade, chief scientist at the UN Environment Programme**, told the Guardian that these biodegradable plastics were not a simple solution.

"It's well-intentioned but wrong. A lot of plastics labelled biodegradable, like shopping bags, will only break down in temperatures of 50C and that is not in the ocean. They are also not buoyant, so they're going to sink, so they're not going to be exposed to UV and break down," she said.

“Often ‘**biodegradable**’ plastic items (including single-use plastic bags and containers) **break down completely only if exposed to prolonged high temperatures above 50°C**. Such conditions are met in **incineration plants**, but **very rarely in the environment**.”

“...even **bioplastics derived from renewable sources** (such as corn starch, cassava roots, or sugarcane) **or from bacterial fermentation of sugar or lipids (PHA) do not automatically degrade in the environment and especially not in the ocean**.”



Box 4. Biodegradable plastic: The unintended consequences

In an effort to reduce plastic pollution, many governments have outlawed conventional plastic bags, allowing only the use and production of “biodegradable” bags.³² Nonetheless, to limit leakage and damage to the environment, the presence of sound waste management systems are as relevant for the so-called bio-degradable options as for fossil fuel-based plastics. Often “biodegradable” plastic items (including single-use plastic bags and containers) break down completely only if exposed to prolonged high temperatures above 50°C (122°F). Such conditions are met in incineration plants, but very rarely in the environment. Therefore, even **bioplastics** derived from renewable sources (such as corn starch, cassava roots, or sugarcane³³) or from bacterial fermentation of sugar or lipids (PHA³⁴) **do not automatically degrade in the environment** and especially not in the ocean.³⁵



What about supply of biodegradable plastics?

- Sufficient to allow a switch over?
- What is the impact on food supply, environment, etc?

Global market for bioplastics to grow by 20%

by: PlasticsToday Staff in Packaging, Sustainability, Recycling, Materials on November 29, 2017



Global production capacities of bioplastics



Biodegradable plastics 2017 : 0.88 million MT

Biodegradable plastics projected 2022 : 1.086 million MT

Only **43 %** of capacity used for biodegradable plastics.

Balance **57%** are converted to **bio-based non-degradable plastics**

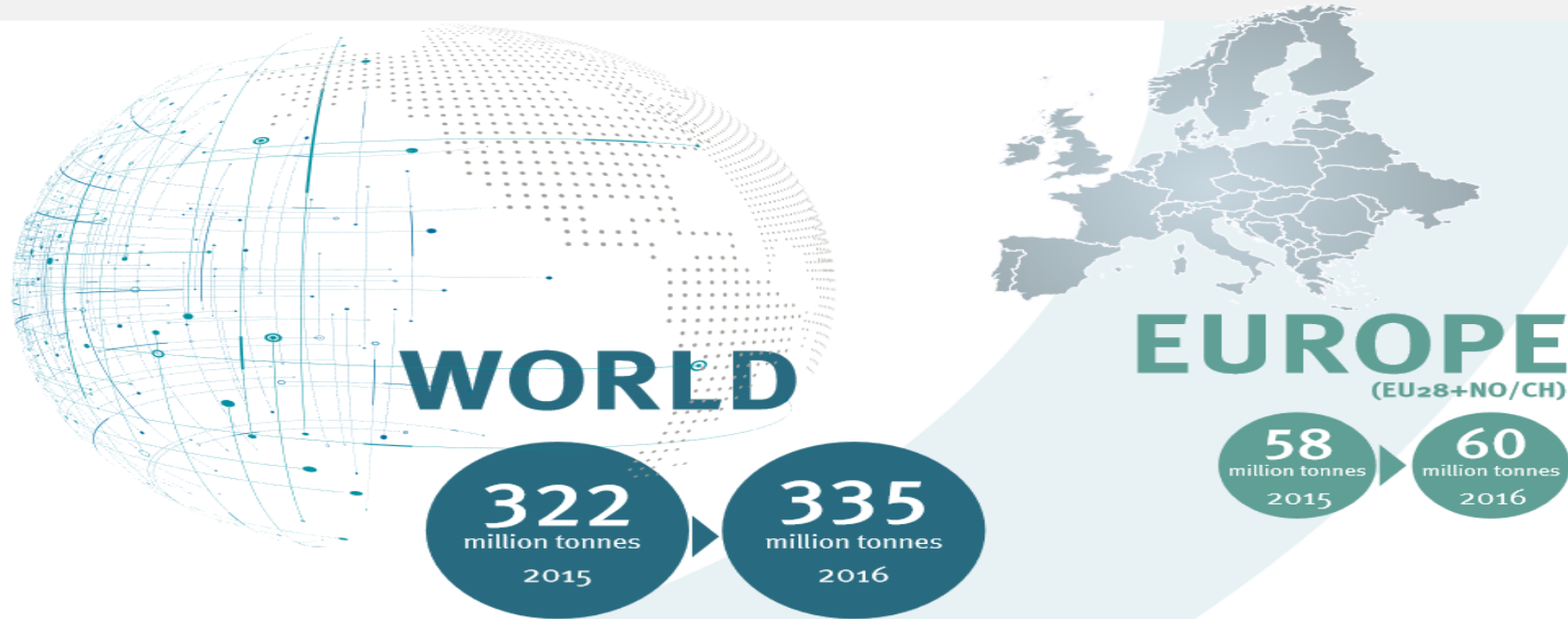
Source: European Bioplastics, nova-Institute (2017).

More information: www.bio-based.eu/markets and www.european-bioplastics.org/market

World and EU plastics production data

Includes plastic materials (thermoplastics and polyurethanes) and other plastics (thermosets, adhesives, coatings and sealants). Does not include: PET fibers, PA fibers, PP fibers and polyacryls-fibers.

Source: PlasticsEurope (PEMRG) / Conversio Market & Strategy GmbH



16

% of degradable bioplastics (2017) to conventional plastics (2016)
= $0.88/335 =$ 0.26 %

Biodegradable bags or bottles compete with food sources , driving up food prices, adversely affecting in particular the poor



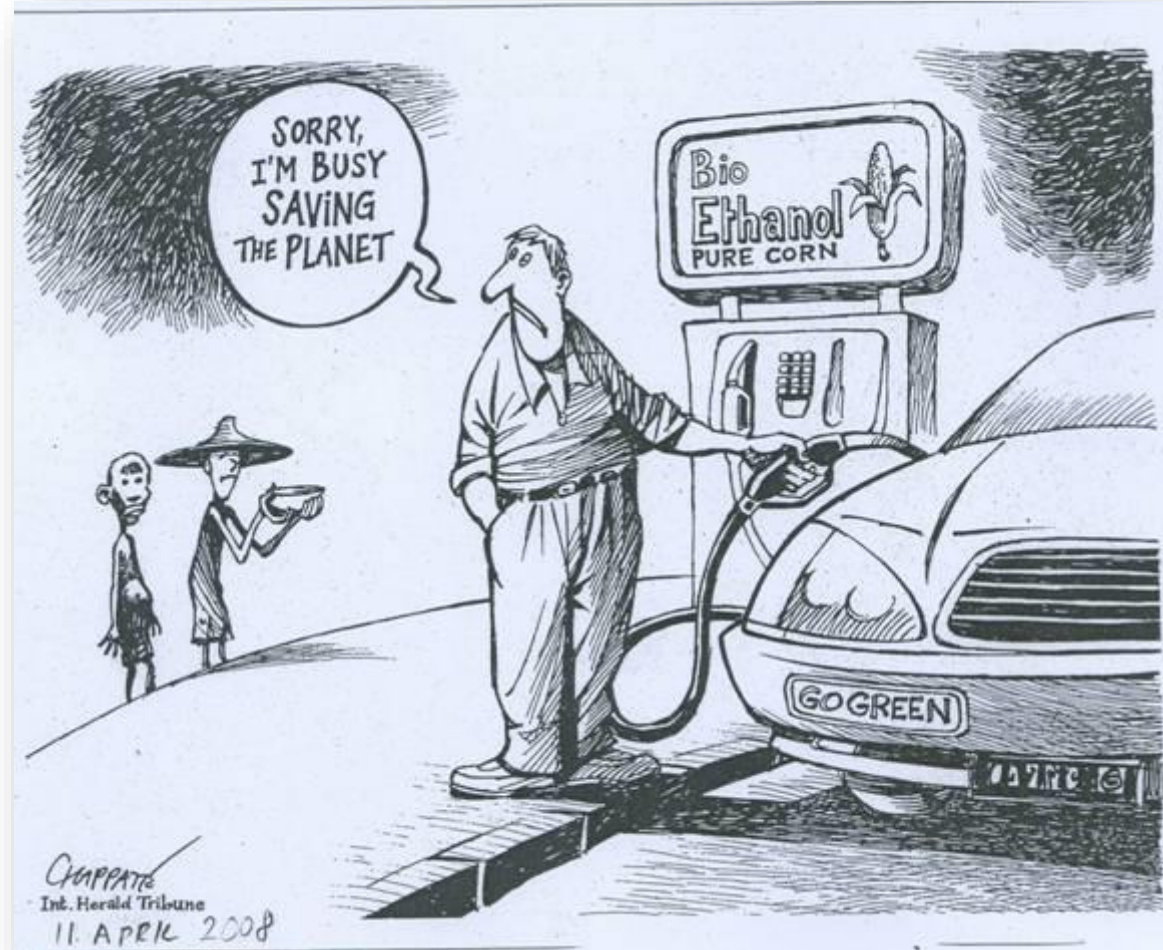
Biodegradable bags

=



Corn, etc

Biofuel and Biodegradable bagsGoing 'Green' ...or Going Hungry?



11 September 2018, CNN

Hunger rising with global temperatures, UN report says

by Hillary Gannett, CNN

Updated 0902 GMT (1702 HKT) September 11, 2018



Facts first: Climate change is real 01:43

Story highlights

821 million people -- one in every nine -- were malnourished in 2017, up from 815 million in 2016.

The UN says the situation is worsening in South America and most regions of Africa.

There was also limited progress in 2017 in addressing multiple forms of malnutrition, such as child stunting (in which children don't grow properly due to undernourishment) and adult obesity, putting the health of hundreds of millions of people at risk.

"Hunger has been on the rise over the past three years, returning to levels from a decade ago," the UN agencies responsible for hunger and health said in a statement.

(CNN) — Climate change is having a negative effect on global agriculture and is driving up the number of hungry people around the world, according to the United Nations' 2018 State of Food Security and Nutrition in the World report, released Tuesday.

It found that 821 million people -- one in every nine -- were malnourished in 2017, up from 815 million in 2016, putting at risk the UN's goal of eradicating hunger in the world by 2030.



Advertisement

“**Climate change** is having a **negative effect on global agriculture and is driving up the number of hungry people around the world**, according to the United Nations' 2018 State of Food Security and Nutrition in the World report, released Tuesday.”

“The effects of climate variability on rainfall patterns and agricultural seasons, and **climate extremes such as droughts and floods, are among the key drivers of the rise in hunger**, together with conflict and economic slowdowns, the UN said.”

“**Rising temperatures, the late or early start of rainy seasons and the unequal distribution of rainfall within a season are affecting food production.** Other effects include food price hikes and losses in poor farmers' incomes.”

Other adverse impact

- i. Degradation of the environment from extensive use of chemical fertilisers and weedkillers/pesticides. Polluting ground water and the sea (impact on corals and other marine life)
- ii. Mono-cropping uses extensive amount of fresh water (shortage worldwide) and precious arable land (Clearing more forests will result in habitat loss for animals, etc)
- iii. Agricultural runoff (fertilisers) can stimulate aquatic plant growth, such as algae blooms, which results in oxygen depletion (**eutrophication**). This can cause harm to marine life

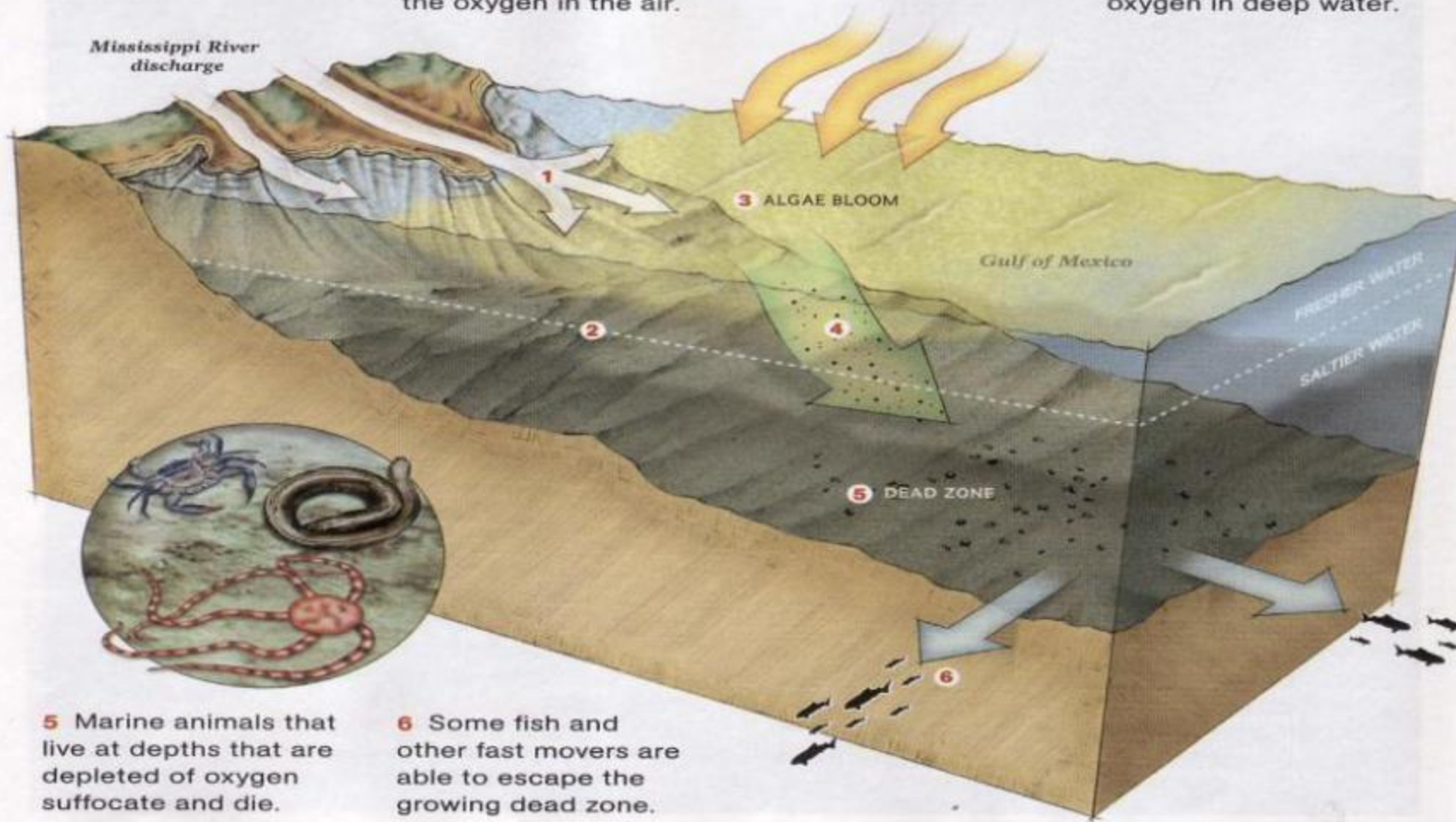
HOW THE DEAD ZONE KILLS

1 Fertilizer and other compounds empty from the Mississippi River into Gulf waters.

2 In spring, freshwater runoff creates a barrier layer, cutting off the salt water below from the oxygen in the air.

3 Problem: Various fertilizers and the warming waters cause an algae bloom.

4 Dead algae sink to the bottom and are decomposed by bacteria, depleting the oxygen in deep water.



5 Marine animals that live at depths that are depleted of oxygen suffocate and die.

6 Some fish and other fast movers are able to escape the growing dead zone.

SOURCES: NANCY N. RABALAIS, LOUISIANA UNIVERSITIES MARINE CONSORTIUM; JAMES M. COLEMAN, COASTAL STUDIES INSTITUTE, LOUISIANA STATE UNIVERSITY; NGM MAPS

ART: HIRAM HENRIQUEZ, NG STAFF



MPMA's Views

- Biodegradable plastics has pros and cons. It is not the magic bullet.
- Banning all types of SUP products is not viable
- A conventional fossil fuel based plastic product is functional and useful, but it becomes a problem **ONLY** when it is discarded indiscriminately
- Littering is a behavioural problem.
- **Promote and adopt Anti-litter and 3Rs programmes, implement circular economy.**

PROBLEM STATEMENT

The severity of plastic pollution in Malaysia



Low recycling rates of plastic waste



The absence of environmentally friendly, cost effective alternative



Absence of uniform policy framework



Solution:
Roadmap's Action Plan

Littering, which is the root cause of why SUP or any other material is causing problems to the environment, is not included in the Problem Statement

The issue of littering is mentioned as “Challenges” rather than as a “Problem Statement”

CHALLENGES BEFORE US



Lack of Awareness

The problem of plastic waste in Malaysia is driven by the habit of littering and unsustainable consumption habits. The implementation of this Roadmap will be complemented by an effective and target-based CEPA program.

"Biodegradable plastics" are not the Panacea to Solid Waste

Lately, the BPI and its members are seeing an increasing number of "biodegradable" claims, relating to plastic bags and other plastic items. Manufacturer claims include phrases like "biodegrades in landfills" or "reduces the impact of litter because they are biodegradable". The BPI is increasingly concerned by these claims not only in the US but also in Canada.

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Additionally, the overwhelming majority of consumers believe that these products will "biodegrade" in landfills. Yet, today's landfills are engineered to eliminate moisture and to retard biodegradation. In fact, researchers have found in landfills legible 30 year old newspapers; 5 year old lettuce and 10 year old hotdogs.

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"...manufacturers, consumers and communities should be looking for **solutions to solid waste issues** that encompass **source reduction, reuse and greater use of recycling and composting**, all of which divert materials from landfills and incinerators."

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Litter

Preventing litter requires a combination of awareness, education, the enforcement of suitable laws, and sound waste management practices.

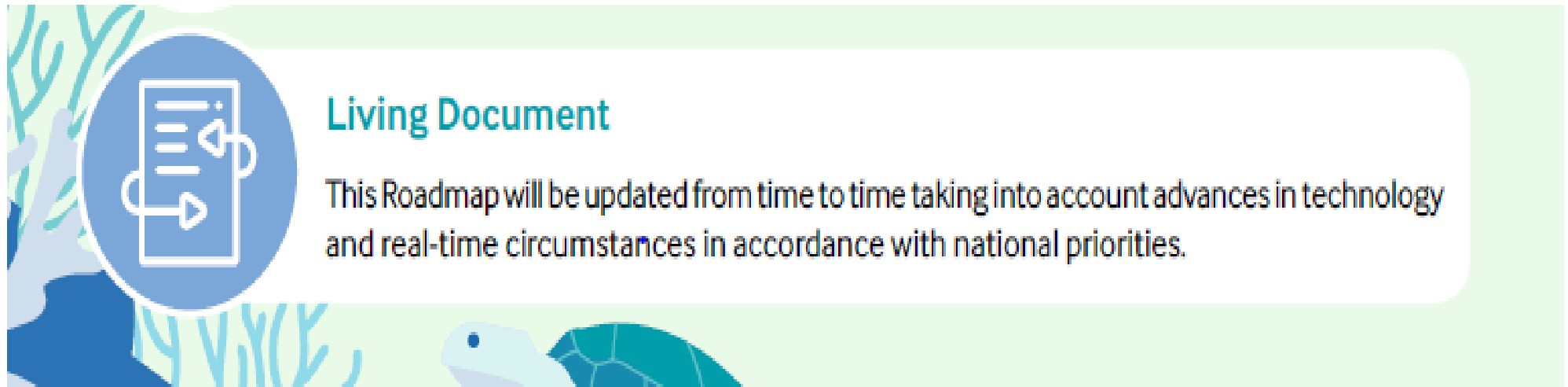


Awareness campaigns, focused reduction, Circular Economy

- The Roadmap provides for a levy on plastic bags
- Levy to be used for :
 - i. Addressing plastic pollution
 - ii. CEPA activities – communication, education and public awareness. Anti-Litter and 3Rs programs critical.
- “No straw by default”
- Develop a regional marine debris project
- Develop Circular Economy Roadmap, and develop capacity for Circular Economy.

Living Document

- The Roadmap is a “Living Document” – provision for advances in technology and real-time circumstances
- Any decision to be adopted must take a holistic approach and be based on science.



Conclusion

- The Roadmap should be entitled “Towards Zero Single-Use Plastics Pollution” or “Towards Sustainable Single-Use Plastics”.
- Adopt a focused approach on specific types of SUP, not ZERO SUP.
- Conventional plastics is functional and useful – so long as it is not littered.
- Littering is a behavioural problem
- However, the marine litter problem is REAL, HUGE and URGENT.

- The solution:
 - i. Adopt a holistic roadmap that focuses on specific SUP
 - ii. Anti-Litter – stop the leakages
 - iii. Circular Economy /3Rs
 - iv. Clean ups of existing marine litter



MALAYSIAN
PLASTICS
MANUFACTURERS
ASSOCIATION

Thank you!

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