Regulations on the Use of Plastic Bags in the Philippines and in Other Countries*

I. INTRODUCTION

The improper disposal of used plastic bags has been known to cause long-term damage to the ecosystem and the natural environment. Plastic waste takes a long time to degrade in soil and contributes to air, water, and soil pollution. Plastic bags that end up in landfills bring significant environmental burden that relates to resource use (EPA, 2016).

There is a significant body of scientific evidence on the environmental impacts of plastics, including plastic bags, on the marine environment. Single-use plastic bags, also referred to as disposable plastic bags, are highly visible and mobile in the environment, entangling and choking marine life that approach or ingest them. In economic terms, single-use plastic bags in the environment represent a negative externality because their manufacturers and users do not pay for the societal and environmental costs of utilizing them.

To reduce its costly environmental impact, several countries have already imposed taxes on plastic bags, while others have even gone so far as to implement a total ban.

In this connection, this paper aims to provide a brief background information on plastics and plastic bags, the emerging trends in the regulation thereof in different countries, the existing plastic bag regulations implemented in selected local government units (LGUs) in the country, and the emerging proposal on the excise tax on plastic bags.

II. BACKGROUND INFORMATION

A. Definition of plastics and plastic bags

Plastic is a lightweight, hygienic and resistant material which can be molded in a variety of ways and utilized in a wide range of applications. The two main categories of plastics are thermoplastics and thermosets, viz.:

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(a) <u>Thermoplastics</u> are a family of plastics that can be melted when heated and hardened when cooled. These characteristics, which lend the material its name, are reversible, i.e., it can be reheated, reshaped and frozen repeatedly.

The most common thermoplastics are polyethylene terephtalate (PET), polypropylene (PE), low density polyethylene (LDPE), high density polyethylene (HDPE), polystyrene (PS), expanded polystyrene (EPS), polyvinyl-chloride (PVC), polycarbonate, polypropylene (PP); polylactic acid, (PLA) and polyhydroxyalkanoates (PHA).

(b) <u>Thermosets</u> are a family of plastics that undergo a chemical change when heated, creating a three dimensional network. After they are heated and formed, these plastics cannot be re-melted and reformed.

The most common thermosets are polyurethane (PUR), phenolic resins, epoxy resins, silicone, vinyl ester, acrylic resins, urea-formaldehyde (UF) resins (UNEP, 2018).

Single-use plastics are commonly used for plastic packaging and include items intended to be used only once before they are thrown away or recycled. These include, among other items, grocery bags, food packaging, bottles, straws, containers, cups and cutlery (UNEP, 2018).

Plastic bag, polybag, or **pouch** is a type of container made of thin, flexible, plastic film, nonwoven fabric, or plastic textile, which are used for containing and transporting goods such as foods, produce, powders, ice, magazines, chemicals, and waste. It is a common form of packaging material (Kulkarni, 2018).

Plastic bags come in different types, each offering unique benefits and features that are suitable for a particular use. Its categorization can be done by considering the color, size and other physical features, viz.:

(a) **HDPE** – one of the most common types of plastic bags. It is used to produce highly dense plastic bags that are sturdy, light in weight, and relatively opaque.

The preference for plastic bags made of HDPE lies in their ability to hold a lot of items or weight without breaking. The bag is also extremely resistant to chemicals, water, and even heat. It can conceal the content carried because of its opaque nature. It is safe for packaging or transporting food.

This is the material used in the manufacture of garbage bags, laundry bags, and utility bags, among others. It is also used for manufacturing plastics used in handling, packaging or serving foods or materials that require a carbon dioxide (CO₂) or oxygen barrier.

(b) **LDPE** - these types of plastic bags are commonly used in the manufacture of utility bags and plastics for use in food packaging.

This plastic comes with a low melting point, making it ideal for heat sealing applications. The light polymer means that the material is easy to see through.

This is the material of choice for restaurants and food joints looking to package their foods. Dry cleaners, butcheries, and suppliers of consumable produce commonly use this type of plastic bags.

(c) **Linear low-density polyethylene** (**LLDPE**) – a common type of material used in the manufacture of plastic bags for use in newspaper bags, garbage bags, and food bags, among others.

The gauge and clarity of LLDPE are slightly lower compared to HDPE plastic but the strength is maintained. As a result, they are cost-effective, and thus preferred compared to LDPE plastics. This plastic bag is common with refrigerator storage and laundry stores.

(d) **Medium density polyethylene** (**MDPE**) – the middle ground between high density and low-density polyethylene. Though it is not as opaque as high density, the film is not as clear as low-density polyethylene. The resulting film is also not dense enough to accommodate bulk storage.

It is very tolerant to chemical encounter. It comes with low tensile properties and easily stretches. It is, therefore, used in garbage bags and packaging films.

(e) **PP** – one of the most popular types of plastic bags. The material has extremely impressive chemical resistance properties. It is also very strong and can withstand heat because of a high melting point. It is, however, less opaque. The longer shelf life, being non-breathable and food safe make the plastic ideal for retail operations.

It is used in packaging and storage of ketchup, candies, syrups, and medicines, among other liquid sensitive items. It can be comfortably used for packaging hot supplies without damage (Plastic Bag Source, 2018).

Plastic carrier bags are plastic bags used by shoppers that are light, inexpensive, and convenient. It is usually used only once, and are often given away free by supermarkets and other shops. There are three types of plastic carrier bags, viz.:

(a) **Single-use non-biodegradable plastic carrier bags** are thin walled, lightweight plastic carrier bags used to carry goods from supermarkets and other shops and often provided free of charge. They are single-use in the sense that they are usually only used for one shopping trip, though they are often reused for some other purposes such as to hold household waste. It is usually made of HDPE, but can also be LDPE.

(b) **Biodegradable plastic carrier bags** are plastic bags made of bio-based materials such as natural polymers from renewable sources like cellulose, starch, and plant-based proteins, polymers synthesized from renewable sources, and polymers produced by microorganisms.

It is usually marketed as replacements for single-use non-biodegradable plastic carrier bags due to their claimed environmental benefits such as reduction in non-renewable resource use by replacement with renewable resources (e.g. wheat, potato, maize), and degradability in the environment, which would reduce litter and landfill quantities. However, despite the name, biodegradable plastic carrier bags do not degrade rapidly in the environment, as the required conditions for it to degrade are generally not present in the natural environment.

(c) Multiple use or reusable plastic carrier bags are plastic carrier bags designed to encourage high levels of reuse by incorporating greater thickness and/or more robust, durable materials. These are usually made of LDPE/LLDPE plastic materials, which has a glossy appearance, or even thicker PP plastic material, a thermoplastic polymer that resembles canvas in appearance and is even more durable. It is usually sold at supermarket cash registers (EC-DGE, 2011).

B. Negative impacts of plastics

The production, use, and disposal of plastics are associated with significant adverse externalities in the environment, economy and society, at different stages of their life cycle, which include the following:

- (a) Impacts of plastic production and use
 - i. Conventional plastic production is highly dependent on virgin fossils feedstocks (mainly natural gas and oil) as well as other resources, including water it takes about 185 liters of water to make a kilogram of plastic.
 - ii. Some plastics contain toxic chemical additives, which are used as plasticizers, softeners or flame retardants. These chemicals include some persistent organic pollutants (POPs) which have been linked to health issues such as cancer, mental, reproductive, and developmental diseases.
- (b) Impacts from disposal and post-disposal
 - i. It is difficult to recycle some plastics without perpetuating the harmful chemicals they contain. Some plastics are very thin such as plastic bags and films, or multi-layered such as food packaging, making them difficult and expensive to recycle.
 - ii. Around 4,900 metric tons (MT) of the estimated 6,300 MT total of plastics ever produced have been discarded either in landfills or elsewhere in the

environment. This is expected to increase to 12,000 MT by 2050 unless action is taken

- iii. Plastics stay in the environment for a long time. Some take up to 500 years to break down. After climate change, plastic is the biggest threat to the future of coral reefs.
- iv. In the marine environment, plastics are broken down into tiny pieces (microplastics) which threaten marine biodiversity.
- v. Microplastics are an emerging source of soil pollution, which could have a long-term damaging effect on terrestrial ecosystems globally through adverse effects on organisms, such as soil-dwelling invertebrates and fungi, needed for important ecosystem services and functions.
- vi. Microplastics are also an emerging freshwater contaminant which may degrade water quality and consequently affect water availability and harm freshwater fauna.
- vii. A significant proportion of disposed plastic ends up in municipal solid waste. In many developing countries, inadequate or informal waste management systems mean that waste is usually burned in open dumps or household backyards. The open burning or incineration of plastic has three negative effects: (a) it releases CO₂ and black carbon, (b) it is a significant source of air pollution, including the emission of unintended POPs; and (c) it poses severe threats to plant, animal, and human health, because toxic particulates can easily settle on crops or in waterways, degrading water quality and entering the food chain.
- viii. In 2014, the United Nations Environment Programme (UNEP) estimated the natural capital cost of plastics, from environmental degradation, climate change and health to be about USD75 billion annually with 75 percent of these environmental costs occurring at the manufacturing stage. A more recent analysis indicates the environmental cost could be up to USD139 billion (STAP, 2018).

C. The Philippine plastics industry

In the Philippines, the plastics industry can be categorized according to its manufacturing stages, viz.:

- (a) <u>Upstream</u> manufactures the basic raw materials called monomers from naphtha which is an oil refinery by-product.
- (b) <u>Midstream</u> produces the plastic resins or polymers from monomers by the Association of Petrochemical Manufacturers of the Philippines.

(c) <u>Downstream</u> refers to the plastic fabricators and manufacturers which convert plastic resins to industrial and consumer finished products. The industry is categorized into subsectors based on their finished products such as flexible plastics; net, twine and sack; pipes and fittings; plastic bags; PVC products; recycled plastics; rigid plastics; styro plastics; and tapes and others. It also serves as an allied industry with strong linkages to automotive and transportation; home appliances; food, drug, and cosmetics; soap and detergent; fiber and textiles; electrical and electronics; buildings and construction; and healthcare [Philippine Plastics Industry Association, Inc. (PPIA), n.d.].



Figure 1. Backward and forward linkages of the plastic industry (PPIA, n.d.)

The industry lacks an upstream sector to provide the midstream with ethylene and propylene. The midstream which manufactures synthetic resins PVC, PS, PP and PE for the downstream sector, had to import and are vulnerable to foreign exchange fluctuations and tariff rates. This part of the industry has not grown very large due to the insufficient supply of inputs from its upstream sector (PPIA, n.d.).

The current shape of the industry is central to the downstream industry. There are 1,600 companies in the downstream industry. Some of the companies, particularly the small ones, have encountered problems that force them to close and sell their business to larger plastic manufacturing companies (PPIA, n.d.).

Per the 2014 Philippine Statistical Authority (PSA) data, there were 1,088 local plastic manufacturers throughout the Philippines, which generated about 56,114 jobs. Majority of these firms were situated in the National Capital Region (NCR) with 642 firms and generated some 26,609 jobs. This was followed by CALABARZON area with 176 firms generating 17,012 employment, Central Luzon with 87 registered firms with 5,287 jobs generated, Central Visayas at 87 firms generated 2,751 employment, and Northern Mindanao and Davao regions with 68 registered firms generated 3,231 jobs (BOI, 2017).

Some large domestic plastic companies are engaged in the production of plastic motor vehicle parts and components for Toyota, Mitsubishi and Isuzu. Some are engaged in shipbuilding through fabricated glass while most micro and small plastic firms are engaged in the production of plastic packaging such as plastic bags (BOI, 2017).

Based on the latest Annual Survey of Philippine Business and Industry for the period 2014 to 2016, the annual average number of manufacturers of plastic articles for packing goods (e.g. boxes, bags, sacks, etc.) totaled 376 establishments with average total income of P57.5 billion. Average total employment from this sector stood at 24,600 of which 99.7 percent were paid employees. Average employment per establishment was at 65 employees with average annual compensation per paid employee of P202 thousand. (See Table 1.)

Table 1
Manufacture of plastic articles for packing goods (e.g. boxes, bags, sacks, etc)

Particulars	2014	2015	2016	Average
No. of establishments	371	383	375	376
Total income (in P billion)	53.36	59.74	59.26	57.45
Total employment	25,396	25,430	22,975	24,600
Paid employees	25,347	25,302	22,933	24,527
Employment per establishment	68	66	61	65
Annual compensation per paid employee (in P thousand)	181	216	209	202

Note. Data extracted from the PSA (2017), (2018) and (2019).

Meanwhile, two manufacturers of plastic articles for packing goods were included in the 2017 Top 1000 Corporations in the Philippines (2018). Gross revenue for these manufacturers totaled P4.6 billion, viz.:

Table 2
Manufacturer of plastic articles for packing goods (e.g. boxes, bags, sacks, etc.) included in the Top 1000 Corporations in the Philippines 2017

Company	2017 Gross revenue (in millions)
Flexible Packaging Products Corporation	2,558
Cygnus Industries, Inc.	2,084
Total	4,642

Note. Basic data taken from the Business World (2018).

III. POLICY INSTRUMENTS TO REDUCE THE CONSUMPTION OF PLASTIC BAGS

Policy interventions to reduce the consumption of plastics have been implemented at the national and local levels of government. The policy tools used to limit the use of plastic bags include regulatory instruments such as banning the use of plastic bags, economic instruments such as imposing levies or taxes, or a combination of both. (See Table 3.)

Table 3
Policy tools to limit the use of plastic bags

Policy to	ols	Features
Regulatory instruments	Ban	Prohibition of a particular type or combination of single-use plastics (including plastic bags, foamed plastic products, etc.). The ban can be total or partial (for those of certain specifications, e.g. plastic bags $<30\mu$ thickness).
Economic instruments	Levy on suppliers	Levy paid by suppliers of plastic bags (domestic producers or importers). For such a tax to be effective in inducing behavioral change, it should be fully passed on from suppliers to retailers, enticing the latter to (i) charge consumers for plastic bags or (ii) offer a rebate/reward to consumers who do not ask for plastic bags, promoting the use of reusable ones.
	Levy on retailers	Levy to be paid by the retailer when purchasing plastic bags. The retailers are not obligated to convey the tax to the consumers.
	Levy on consumers	Charge on each bag sold at the point of sale; standard price defined by law.
Combination of regulatory and economic instruments	Ban and levy	Combination of ban and levy (for instance a ban on thin plastic bags and a levy on thicker ones).

Note: Table copied from UNEP (2018, p. 23).

Based on the UNEP (2018) study on single-use plastics, a significant number of national and local governments around the world have developed and implemented policies and economic measures to reduce the use of plastic bags. At the national level, Africa has the highest number of countries imposing a ban on plastic bags while Europe has the highest number of countries imposing a levy on plastic bags. It is noted that in North America, Canada, and the United States of America only impose policies and economic measures on plastic bags at the local or federal state level. (See Table 4.)

Table 4
Number of countries per region imposing policies and economic measures on plastic bags at the national level, 2018

Region	Ban	Levy	Ban & levy
Africa	22	1	3
Asia	5	2	3
Central & South America	4	0	1
Europe	1	15	4
North America	0	0	0
Oceania	4	1	0
Total	36	19	11

Note. Source of basic data UNEP (2018).

At the national level, there are less number of countries providing for a thickness level criteria and exemption for banning the use, production, distribution and importation of plastic bags (See Table 5).

Table 5
Number of countries per region imposing a ban on plastic bags at the national level, 2018

Darion	Thickne	Thickness criteria	
Region	With	Without	- Exemptions
Africa	6	16	1
Asia	3	2	0
Central & South America	0	4	0
Europe	1	0	1
North America	0	0	0
Oceania	0	4	1
Total	10	26	3

Note. Source of basic data UNEP (2018).

Listed below are the countries imposing a ban on plastic bags at the national level based on a certain thickness criteria, and countries which are exempting certain types of plastic bags from the ban, viz.:

(a) Africa:

- i. Côte d'Ivoire bans the importation, production, use, and sale of non-biodegradable plastic bags <50 microns (μ);
- ii. Ethiopia bans the production and importation of non-biodegradable plastic bags $<30\mu$;

- iii. Malawi bans the use, sale, production, exportation, and importation of plastic bags $<60\mu$;
- iv. Mozambique and Senegal ban the production, importation, possession and use of plastic bags $<30\mu$;
- v. Uganda bans lightweight plastic bags <30μ; and
- vi. Mauritius bans the importation, manufacture, sale or supply of plastic bags while exempting 11 types of plastic bags for essential uses and hygienic and sanitary purposes, e.g. roll-on bag for meat products, waste disposal bags, bags as integral part of packaging, and bags manufactured for export.

(b) Asia:

- i. India bans non-compostable plastic bags $<50\mu$ at the national level while local units also provide for their own thickness level criteria for banning;
- ii. Mongolia bans the importation and use of non-biodegradable plastic bags $<25\mu$; and
- iii. Sri Lanka bans the importation, sale, and use of polyethylene bags <20μ.

(c) Europe:

i. France bans lightweight single-use plastic carrier bags, $<50\mu$ and <10 liters, which was later expanded to cover all other plastic bags except compostable bags in 2017. It also prohibits the production, distribution, sale, provision or use of oxo-degradable plastic bags.

(d) Oceania:

 Vanuatu bans the manufacture, use and import of single-use plastic bags, straws and polystyrene takeaway food containers while exempting bags to wrap and carry fish or meat.

Meanwhile, for levies imposed at the national level, more countries are imposing levies on consumer than on supplier and retailer. It is noted that, except for Vietnam, the levies are imposed on a per bag basis, regardless of taxpayer. Meanwhile, countries imposing levies on consumers are usually imposed at the point of retail sale such as supermarkets. (See Table 6.)

Table 6
Number of countries per region and per type of taxpayer imposing a levy on plastic bags at the national level, 2018

Region	Levy on consumer	Levy on retailer	Levy on supplier	Not indicated
Africa	1	0	0	0
Asia	0	1	0	1
Central and South America	0	0	0	0
Europe	9	1	5	0
North America	0	0	0	0
Oceania	1	0	0	0
Total	11	2	5	1

Note: Source of basic data UNEP (2018).

Table 7 shows a list of the selected countries imposing a levy on plastic bags at the national level. Ireland has the highest levy imposed on plastic bags at approximately P39.63 per bag, which served as the ceiling rate. Currently, the levy is pegged at about P12.46 per plastic bag. This is followed by Denmark at approximately P28.57 per plastic bag. Meanwhile, Vietnam is imposing a levy of around P87.46 per kilogram on non-biodegradable plastic bags. Using the assumption of 140 bags per kilogram, it shows that Vietnam has the lowest levy on a per bag basis at about P0.62.

Table 7
Selected countries imposing a levy on plastic bags at the national level, 2018

Region	Country	Details	PhP equivalent
Asia	Vietnam	Levy on retailer on non-biodegradable plastic bags of VND 40,000 per kilogram	PhP87.46
Europe	Bulgaria	Levy on supplier on PE bags $<15\mu$ of USD 0.10	PhP5.10
	Cyprus	Levy on consumer of €0.05 for plastic bags in supermarkets	PhP2.83
	Denmark	Levy on supplier for plastic bags at USD 0.56 per bag	PhP28.57
	Greece	Levy on consumer of $\[\in \]$ 0.07 for non-biodegradable plastic bags $\[< 50 \mu \]$	PhP3.96
	Ireland	Levy on consumer for plastic bags at	PhP12.46 – PhP39.63
	Malta	Levy on consumer on all sorts of plastic bags of €0.15	PhP8.49
	Netherlands	Levy on consumer at €0.25 per bag	PhP14.15
	Portugal	Levy on supplier at €0.10 per bag between 15-50μ	PhP5.66
	Sweden	Levy on consumer for plastic bags of €0.05	PhP2.83
Oceania	Fiji	Levy on consumers at FJD 0.10 per plastic bag	PhP2.32

Note. Source of basic data UNEP (2018). For the foreign exchange conversion, Oanda Currency Converter was used, as of 30 October 2019.

Table 8 shows the list of selected countries imposing a ban on plastic bags less than a given thickness level and a levy on thicker ones. Except for Hong Kong, which imposes a levy on retailer, the levies are generally imposed on consumers at the point of retail sale such as supermarkets and grocery stores. Among the countries listed, Colombia has the lowest levy at about P0.30 per single-use plastic bags while Italy has the highest maximum levy of about P6.12 on lightweight plastic bags.¹

Table 8
Selected countries imposing a ban and levy on plastic bags at the national level, 2018

Region	Country	Ban	Levy	PhP Equivalent
Asia	Hong Kong	Free plastic shopping bags at all points of retail sales	Levy on retailer of at least HKD 0.50 for each plastic shopping bag provided to consumers	PhP3.25
	Israel	$Bags <\!\! 20 \mu$	Levy on thicker ones in supermarkets at around USD 0.03	PhP1.53
Central & South America	Colombia	Disposable plastic bags smaller than 30x30 cm	Levy on consumer on single-use plastic bags of COP20.00	PhP0.30
	Italy	Non-biodegradable plastic bags <100μ	Levy on consumers for lightweight plastic bags in supermarkets and grocery stores around USD 0.025 to USD 0.12	PhP1.28 – PhP6.12
	Romania	Plastic bags $<50\mu$ in supermarkets and $<15\mu$ on national markets	Levy on consumer of €0.05 on non-biodegradable plastic bags	PhP2.83

Note. Source of basic data UNEP (2018). For the foreign exchange conversion, Oanda Currency Converter was used, as of 30 October 2019.

IV. SELECTED ORDINANCES ON PLASTIC BAGS IMPOSED BY LGUs IN THE PHILIPPINES

The use of plastic bags has long been discouraged in some LGUs in the Philippines. In fact, most LGUs prohibit the sale and utilization of plastic bags rather than imposing a levy.

Based on latest available data from the Department of Environment and Natural Resources (DENR), there are 316 LGUs with ordinance regulating or banning the use of plastic bags in the Philippines. (See Table 9.)

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¹ For the detailed list of countries imposing policies and economic measures on plastic bags as provided in the UNEP (2018) study on single-use plastics, please refer to Annex A.

Table 9
Number of LGUs with ordinances regulating or banning the use of plastic bags in the Philippines, 2019

Region	Number of LGUs
Cordillera Autonomous Region	16
National Capital Region	14
Region 1	55
Region 2	44
Region 3	41
Region 4A	66
Region 4B	no report submitted yet
Region 5	no report submitted yet
Region 6	no report submitted yet
Region 7	32
Region 8	no report submitted yet
Region 9	no report submitted yet
Region 10	21
Region 11	6
Region 12	no report submitted yet
Region 13	21
Autonomous Region in Muslim Mindanao	no report submitted yet
Negros Island Region	no report submitted yet
Total	316

Note. DENR, official communication, 2019

Table 10 provides for a summary of ordinances banning the selling, provision, and use of plastic bags in selected LGUs in the Philippines. Some LGUs such as Quezon City, Bacolod City, and Candon City in Ilocos Sur provide for exemptions on plastic bags with no handles, holes or strings commonly used as primary packaging or exclusively used for wrapping unpacked fresh foods and cooked foods.

Table 10 Selected LGUs imposing a ban on plastic bags in the Philippines

LGU	Features	Exemptions
Antipolo City, Rizal	Ban on the use of plastic bags as primary packaging material on dry goods.	Use of plastic bags as primary packaging material for wet goods.
Bacolod City, Negros Occidental	Ban on the utilization, selling or provision of plastic bags and/or sando bags as packaging materials to customers.	Plastic bags with no handles, holes or strings commonly used as primary packaging for wrapping unpacked fresh foods.
Baler, Aurora	Ban on non-biodegradable plastics and cellophanes.	Biodegrdable plastics with maximum length of 12 inches and
	Prohibits the establishment of factories and those engaged in the manufacture of non-biodegrdable plastic bags and cellophanes.	a width of 5 inches in its unexpanded form. To be used for food items with liquid consistency, flour, sugar and coffee.
Batangas City	Ban on the use of plastic bags as packaging materials for dry goods.	
	Regulated use of plastic bags as a primary packaging material for wet goods.	
	Ban on the selling of plastic bags to be used as secondary packaging material or as primary packaging on dry goods.	
Bauan, Batangas	Ban on the provision of plastic carryout bags to customers at the point of sale to transport items.	Reusable bags, recyclable paper bags and compostable or biodegradable bags, including biodegradable plastic bags.
Caloocan City	Ban on the selling, provision, and use of non-biodegradable materials such as polystyrene and plastic bags as secondary packaging on dry and wet goods.	Primary packaging of products and such other packaging which forms part of the actual product per se.
Candon, Ilocos Sur	Ban on the use of plastic bags lower than the regulated thickness of 15μ in commercial establishments and vendors in talipapa, tiangge, hawkers and the like.	Plastic bags with no handles, holes or strings commonly used for wrapping unpacked fresh foods and cooked foods.
Gubat, Sorsogon	Ban on the utilization, selling, and provision of plastic bags for secondary or primary packaging materials on dry goods.	Primary packaging materials except sando bags.
Iriga City, Camarines Sur	Ban on the selling, provision, and use of plastic bags either as primary and secondary packaging materials.	

LGU	Features	Exemptions
Kabacan, Cotabato	Ban on the selling and provision of plastic bags to customers as secondary packaging materials on wet goods and as packaging material on dry goods.	
Malay, Aklan	Ban on the selling and provision of plastic bags to consumers either as secondary packaging material on wet goods or primary packaging materials on dry goods.	
Mandaluyong City	Total ban on the use of plastic bags effective April 20, 2014.	
Quezon City	Total ban on the distribution of plastic bags.	Plastic bags with no handles,
	Ban on the distribution of single-use plastic/disposable materials such as but not limited to plastic spoon and fork, knives, plastic/paper cups, plastic/paper straws, coffee stirrers and other single	holes or strings exclusively used for wrapping unpacked fresh foods and cooked foods. Medicine bag – reusable bag or medicine kit appropriate to carry
	use/disposable materials. Hotels are prohibited to distribute soap, shampoo, shower gels, liquid soap, conditioners and other items used for hygienic purposes in sachets and single-used containers.	small quantity of medicines.
San Carlos, Negros Occidental	Ban on the use of plastic cellophanes and sando bags as packaging materials for customers.	
Santa Rosa, Laguna	Ban on the provision of plastic bags to consumers for the carrying and transport of dry goods.	
Tres Martires City, Cavite	Ban on the use of plastic bags as packaging material and as container for dry goods, and as packaging for wet goods.	Plastic products that will end up as recyclable/reusable wastes such as plastic cups (commonly
	Ban on the use of non-plastic wares for food as containers and packaging material.	regarded as high impact), ice cream cups, egg trays, spoon, and fork.
	Ban on the use of plastic couch (commonly used for ice making) and drinking straw for beverages.	
	Ban on the use of plastic bags as garbage bags.	
	Ban on the use of plastic flaglets and "banderitas" in all occasions.	

Note. See Annex B for more details on plastic bag ordinances in selected LGUs in the Philippines.

For LGUs imposing a ban and levy on plastic bags, the Municipality of San Mateo, Rizal, and Valencia City, Bukidnon prohibit the distribution of plastic bags with thickness lower than 15μ while imposing a plastic recovery system fee for the redemption of new plastic bag. For San Mateo, Rizal, a fixed amount of P2.00 per plastic bag regardless of size is collected at all shopping malls, supermarkets, department stores, grocery stores, fast food chains, drug stores, and pharmacies. Plastic bags with no handles, hole or strings are excluded from the prohibition on the ground of public hygiene.

Meanwhile, in the Province of Siquijor no free plastic bags are provided for dry and wet goods. Levies are imposed depending on the size of the plastic bags, i.e. large - P4.00, medium - P3.00, tiny - P2.00, and micro and "selopin" - P0.50. The Province also prohibits the use of plastic bags for secondary packaging, and the use of "selopin" for cooked food and in "automatic tubig machines".

Aside from LGUs, business establishments have promoted the use of bio-degradable and reusable shopping bags. Particularly, SM Supermalls introduced the SM Greenbag in 2008, the first reusable shopping bag in the Philippines, which is made from 100 percent propylene material. The Greenbag's size is equivalent to two regular SM Supermarket shopping bags and has an estimated life span of two years.

The SM Greenbag, in partnership with SM Foundation Inc., Unilever and other SM affiliates, also paved the way to planting over 536,479 trees funded by the amount collected from the plastic bag sales during the Join the M.O.B. (MyOwnBag) campaign in 2009 (Reyes, 2017).

V. PROPOSED REGULATIONS ON PLASTIC BAGS AND PLASTIC PRODUCTS FILED DURING THE FIRST REGULAR SESSION OF THE EIGHTEENTH CONGRESS

During the First Regular Session of the 18th Congress (2020), there were 37 bills and two resolutions filed providing for the taxation, prohibition and/or regulation of plastic bags, plastics, and plastic products in the Philippines, viz.: (See Table 11.)

Table 11 Number of bills and resolutions filed in the 18th Congress on the prohibition and/or regulation of plastic bags and plastic products

Particulars	Plastic Bags	Plastic straws & stirrers	Plastics/Plastic products*	Total
House bills (HBs)	5	2	23	30
Senate bills (SBs)	1	2	4	7
House resolutions (HRs)	0	0	2	2
Total	6	4	29	39

^{*}Plastic products include plastic bags.

Presented below is the salient features of the six bills proposing for the taxation, prohibition and/or regulation of plastic bags, viz.:

(a) **HB 178** – proposal to impose an excise tax on plastic bags

HB 178 was approved by the House Committee on Ways and Means on December 10, 2019. The said bill proposes to impose a P10.00 excise tax for every single-use plastic bag removed from the place of production or released from the customs house.

Under HB 178, single-use plastic bags shall mean single-use plastic carrier bags, with or without handle, which are supplied to consumers at the point of sale of goods or products.

During the public hearings conducted by the House Committee on Ways and Means, it was clarified that the proposed P10.00 excise tax shall be imposed for every kilogram of single-use plastic bags.

A study by the Global Alliance for Incinerator Alternatives (GAIA) shows that for the entire Philippines a total volume of 93 million residual wastes from plastic sando and labo bags are produced per day or 34.1 billion in a year. Using this data and the assumption that there are approximately 140 pieces of plastic bags for every kilogram, the proposed excise tax of P10.00 for every single-use plastic bag could generate estimated revenue of P6.7 million daily or P2.4 billion annually. (See Table 12.)

Table 12
Estimated excise tax collection on the proposed P10.00 excise tax on plastic bags (Amounts in millions)

Particulars		umber for the hilippines	Estimated excise tax collection @ P10.00				
	Daily	Yearly	Daily	Yearly			
Plastic sando shopping bags	48	17,566	3.43	1,255			
Plastic labo bags	45	16,508	3.21	1,179			
Total	93	34,074	6.64	2,434			

Note. Estimated daily number of plastic sando shopping bags and plastic labo bags for the entire Philippines taken from GAIA (2019).

(b) <u>HBs 1754 and 2811</u> – proposal to gradually phase out non-biodegradable plastic bags and establish an in-store recovery program

HBs 1754 and 2811 seek to gradually phase-out non-biodegradable plastic bags within a period of three years from the effectivity of the Act.

Thereafter, production, importation, sale, distribution, provision or use of said bags shall be prohibited.

The bills also mandate for the establishment of an in-store recovery program that will give their customers an opportunity to return their used plastic bags to the commercial establishments from which the plastic bags originated. Under the program, the commercial establishment shall require their customers to surrender an equivalent or practically equivalent plastic bag for the provision of a new plastic bag. Otherwise, the customers or consumers will be charged a fixed fee of P1.00 per plastic bag, which shall be reflected in their receipts.

The commercial establishment shall make local reusable bags available to customers/consumers within the establishment, which shall be purchased in lieu of surrendering an old plastic bag or purchasing a new plastic bag.

The commercial establishment shall also provide biodegradable plastic bags to their customers/consumers. They shall promote and make available for sale locally-made bayong, buli, and other reusable bags that are made of abaca, water lily, and other organic or compostable materials.

Under the bills, the LGUs shall have the primary responsibility in the effort to decrease the percentage of plastic bag waste produced within their respective territorial jurisdictions. They shall be primarily responsible for the collection, transportation, recycling, and disposal of plastic bags recovered pursuant to the Act. The LGUs may enjoin the participation of other concerned government agencies, private entities, and industries.

The Department of Science and Technology, in coordination with the National Ecology Center, shall provide the LGUs with technical assistance, trainings, and continuing capacity-building programs to attain the objectives of the proposed Act.

Violators of the proposed Act shall be penalized depending on the frequency of offense with the fourth offense imposing an automatic revocation of the business permit of the commercial establishment. The fines shall also be imposed based on the capitalization of the commercial establishment.

(c) HB 3537 and SB 114 – proposal to ban or prohibit the use of single-use plastic shopping bags/carryout bag

HB 3537 proposes for the banning of the use of single-use plastic shopping bags at grocery stores, convenience stores, drug stores, delicatessens or similar marketplace. The bill also proposes for the imposition of appropriate fines or penalties to be prescribed by a competent court on violations of the Act.

SB No. 114 seeks for the prohibition of the provision of a single-use carryout bag to a customer at the point of sale. Three months after the

prohibition, stores shall only provide reusable, biodegradable bags that meet the requirements and standards established by the DENR. Stores shall make reusable, biodegradable bags available to customer at no cost or at a reasonable cost. Recycled paper bags shall also be made available for sale to a customer at the point of sale by stores at a reasonable cost.

A store shall mean a retail establishment that meets any of the following requirements: (a) supermarket and grocery store; (b) a retail space over 100 square meters that generates sales of retail goods; and (c) a convenience food store, food mart, sari-sari store or other entity engaged in the retail sale of a limited line of goods that generally includes milk, bread, soda, and snack foods.

(d) <u>HB 3723 – proposal to establish an at-store recycling program for retail establishments</u>

HB 3723 proposes the establishment of an at-store recycling program for retail establishments that provide plastic carryout bags to its customers as a result of the sale of consumer goods. The at-store recycling program shall provide an opportunity for the public to return to the store plastic carryout bags from retail store or any other retail source. Violators shall be imposed a fine depending on the frequency of offense.

For the other bills on plastic products, the emerging proposals call for the prohibition and phase-out of single-use plastic products within one year from the effectivity of the proposed Act. During the interim period, a levy of P5.00 per plastic bag shall be collected for the use of single-use plastic/plastic products already manufactured and in circulation at the time of the gradual phase out. Likewise, the proposals demand for programs for affected employees and workers of the plastic industry as well as for incentives or support for the plastic industries shifting to alternatives. A special fund derived from the collection of the P5.00 interim charge is also proposed to be set-up for the strict implementation and enforcement of the proposed Act.

Common provisions also include the role of the National Solid Waste and Management Commission (NSWMC), LGUs, and other stakeholders, effect of the proposals on LGU ordinances before or after the effectivity of the Act, recycling of single-used plastics, and the fines, penalties or sanctions to be imposed on violators of the proposed Act.

Table 13 presents the salient features of the 24 bills filed in Congress on the regulation of the manufacturing, importation, and use of plastic products.

Table 13 Checklist of salient features of the 24 bills filed in Congress on the regulation of the manufacturing, importation and use of plastic products

	HB Nos.											SB Nos.												
Provision	0103	0139	0499	0546	0574	0635	2396	2484	3140	3338	4339	4435	4644	5489	5623	5772	5773	9209	988	6180	0040	0333	0557	0880
Coverage																								
Single-use plastics							✓			✓	✓		✓	✓	✓	✓		✓						
Single-use plastic productsPlastics		✓	✓	✓	✓	✓			✓			✓					✓		✓	✓	✓	✓	✓	
Plastic products	✓							✓																✓
Biodegradable plastic products for basic services	✓			✓				✓																✓
In-store recovery program	✓							✓																✓
 Levy of P5.00 per new plastic bag 	✓							✓																✓
Exemptions	✓							✓																✓
Ban, prohibition, and phase-out	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Within 1 year	✓				✓	✓		✓	✓	✓		✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓
Within 2 years		✓																						
Within 3 years				✓			✓				✓			✓										
 Interim charge of P5.00 per plastic bag 					✓	✓			✓		✓		✓								✓	✓	✓	
 Interim charge of P8.00 per plastic bag 												✓												
 Interim charge of P5.00, P10.00, and P20.00 depending on type of plastic products 							✓							✓										
 Discount of P5.00 to consumers who bring own containers 					✓	✓			✓				✓								✓			
Prohibition on the importation of single-use plastics		✓			✓	✓			✓		✓	✓	✓				✓		✓		✓	✓		
Recycling of used single-use plastics		✓	✓		✓	✓			✓		✓	✓	✓				✓		✓	✓	✓	✓	✓	
Program for affected employees and workers of the plastic industry	✓	✓	✓		✓	✓		✓	✓		✓	✓	✓								✓	✓		✓
Inclusion in the Philippine National Standard (PNS)						✓			✓				✓								✓			
Incentives/support for the plastic industries shifting to alternatives	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓					✓	✓		✓
Role of NSWMC	✓					✓		✓	✓				✓								✓		✓	✓
Role of LGUs, and other stakeholders	✓	✓				✓	✓	✓	✓				✓	✓			✓		✓		✓		✓	✓
Effect on LGU ordinances effective before or after effectivity of the Act	✓	✓				✓		✓	✓				✓								✓		✓	✓
Special fund for single-use plastic regulation	✓				✓	✓		✓	✓		✓		✓								✓	✓		✓
Fines, penalties, and sanctions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓

Aside from the 24 bills mentioned in Table 13, there are four bills regulating the use of plastic drinking straws and stirrers, two bills regulating the use of plastics during election and in tourist sites/destinations, and one bill prohibiting the use of polystyrene food packaging. Two HRs were also filed prohibiting single-use plastic in all government offices and disallowing the use of disposable plastic water bottles in the House of Representatives.

VI. CONCLUSION AND RECOMMENDATION

The harmful effects of the use of plastic bags or plastic products have long been recognized by different countries in the world. As such, policy tools to limit its use has also been long implemented at national and local levels of government. In fact, data show that most countries prefer to ban the use of plastic bags at the national level instead of imposing a levy.

In the Philippines, just like in other countries, LGUs prefer to ban the use of plastic bags rather than impose a levy on consumers. Thus, the proposal to collect an excise tax on plastic bags might go against the goal of LGUs to discourage its use. It is pointed out that the proposed bill on the excise tax on plastic bags does not contain any provision on its effects on existing LGU ordinances in the country unlike the other bills proposing for the prohibition and phase out of single use plastic products.

In case that the proposed bill on the excise tax on plastic bags is passed by Congress, it should contain provisions on its effects on existing LGU ordinances before or after the effectivity of the Act, programs for stakeholders that will be affected by the proposal, and an earmarking provision just like those contained in recently passed laws on excise taxes that will benefit both the private and public stakeholders.

With the volume of proposed bills calling for the prohibition and phase out of plastic products filed in Congress, it is vital that a consolidation and harmonization of all the proposed bills on plastic bags/products be made, which will contain all the common provisions contained in the different bills.

Annex A
Summary of countries that have introduced regulations on plastic bags

A. Ban on plastic bags

Area	Country	Details
Africa	1. Benin	Ban on import, production, sale and use of non-biodegradable plastic bags.
	2. Burkina Faso	 Ban on production, import, marketing and distribution of non-biodegradable plastic bags.
	3. Cameroon	 Ban on non-biodegradable plastic bags.
	4. Cape Verde	Ban on the sale and use of plastic bags.
	5. Chad■ N'Djamena	Ban on the importation, sale, and use of plastic bags.
	6. Côte d'Ivoire	\blacksquare Ban on the importation, production, use and sale of non-biodegradable plastic bags ${<}50\mu.$
	7. East Africa	Ban on the manufacturing, sale, importation, and use of polythene bags.
	8. Egypt • Hurghada	 Ban on the use of plastic bags.
	9. Eritrea	Ban on the importation, production, sale, and distribution of plastic bags.
	10. Ethiopia	■ Ban on production and importation of non-biodegradable plastic bags $<30\mu$.
	11. Gambia	 Ban on the sale, importation, and use of plastic bags.
	12. Guinea-Bissau	Ban on the use of plastic bags.
	13. Kenya	Ban on the importation, production, sale, and use of plastic bags.
	14. Malawi	■ Ban on the use, sale, production, exportation, and importation of plastic bags $<60\mu$.
	15. Mali	Ban on the production, importation, possession, sale, and use of non-biodegradable plastic bags.
	16. Mauritania	 Ban on the manufacture, use, and importation of plastic bags.
	17. Mauritius	 Ban on the importation, manufacture, sale or supply of plastic bags.
		 Exempt 11 types of plastic bags for essential uses and hygienic and sanitary purposes (for example roll-on bag for meat products, waste disposal bags, bags as integral part of packaging, bags manufactured for export).

Area	Country	Details
	18. Morocco	 Ban on the production, importation, sale, and distribution of black plastic bags.
		Ban on the production, importation, sale, and distribution of plastic bags.
	19. Mozambique	■ Ban on the production, importation, possession, and use of plastic bags $<30\mu$.
		People were advised to use baskets made by either grass or coconut trees.
	20. Niger	 Ban on production, importation, usage, and stocking of plastic bags.
	21. Rwanda	 Ban on the production, use, importation, and sale of all polyethylene bags.
	22. Senegal	 Ban on the production, importation, possession, and use of plastic bags <30μ.
	23. Somalia Somaliland	 Ban on disposable plastic bags.
	24. Tanzania ■ National level	Ban on plastic bags and bottles.
	Local level –Zanzibar	\blacksquare Ban on the importation, distribution, and sale of plastic bags ${<}30\mu.$
	25. Uganda	 Ban on lightweight plastic bags <30μ.
Asia	26. Bangladesh	Ban on polyethylene plastic bags.
	27. Bhutan	Ban on plastic bags.
	28. China ■ Jilin Province	 Ban on production and sale of non-biodegradable plastic bags, and tableware.
	29. India ■ National level	 Ban on non-compostable plastic bags <50μ.
	Local level	
	Himachal Pradesh	 Ban on the production, storage, use, sale, and distribution of non-biodegradable plastic bags <70μ.
	Karnataka	 Ban on manufacturing and sale of plastic bags.
	Punjab	 Ban on manufacture, stocking, distribution, sale or use of single-use plastic carry bags and containers.
	> Haryana	 Ban on manufacture, stocking, distribution, sale or use of plastic carry bags.

Area	Country	Details
	➤ Kerala	■ Ban on plastic bags <50µ.
	West Bengal	■ Ban on plastic bags <40µ.
	> Sikkim	 Ban on delivery or purchasing of goods and materials in plastic wrappers or plastic bags.
	New Delhi	 Ban on all kinds of disposable plastics.
	Maharashtra	■ Ban on plastic bags <50µ.
	30. Indonesia Banjarmasin	Ban on plastic bags.
	31. Malaysia Federal TerritoriesKuala Lumpur,Putrajaya andLabuan	Ban on non-biodegradable plastic bags and food containers.
	32. Mongolia	 Ban on the importation and use of non-biodegradable plastic bags <25μ.
	33. MyanmarMandalay and NayPyi Taw	 Ban on the use of small and thin plastic bags.
	■ Yangon	Ban on the production, storage, and sale of polyethylene bags.
	34. Pakistan ■ Punjab	 Ban on the manufacturing, sale, and usage of non-biodegradable plastic products.
	Sindh	 Ban on certain non-biodegradable plastic products, including carrier bags.
	Islamabad Capital Territory	Ban on the sale, purchase, and use of polyethylene bags.
	Khyber Pakhtunkhwa	 Ban on the manufacture, importation, sale, and use of non-biodegradable plastic bags, and regulation of oxo- biodegradable plastic products.
	35. Sri Lanka	■ Ban on the import, sale, and use of polyethylene bags <20µ.
Central and	36. Antigua and Barbuda	 Ban on the use and importation of plastic bags.
South America	37. ArgentinaBuenos Aires	 Ban on non-biodegradable plastic shopping bags <50μ.
	Cordoba	■ Ban on the use of polyethylene bags.

Area	Country	Details
	38. Belize	 Ban on single-use plastic shopping bags, Styrofoam, and plastic food utensils.
	39. Brazil ■ Sao Paulo	 Ban on non-biodegradable plastic bags.
	40. Chile ■ Punta Arenas	 Ban on polyethylene bags except for perishable food products (fresh food such as meat, seafood, etc.).
	41. EcuadorGalapagos Island	■ Ban on plastic bags.
	42. GuatemalaSan Pedro LaLaguna and othercities	 Ban on plastic bags.
	43. Haiti	 Ban on the importation and production of plastic bags.
	44. Honduras Municipal level in Roatán, Utila, and Guanaja	 Ban on plastic bags instituted at the municipal level. Accompanied by an awareness raising campaign.
	45. Mexico ■ Queretaro	 Ban on disposable plastic bags.
	46. Panama	 Ban on the sale and use of non-biodegradable plastic bags.
Europe	47. Belgium ■ Wallonia	 Ban on the use of single-use plastic bags.
	Brussels Capital Region	 Ban on non-compostable plastic bags <50μ.
	48. France	Ban on lightweight single-use plastic carrier bags (<50μ and <10litres), expanded in 2017 on all other plastic bags, except compostable bags.
		 Prohibition on the production, distribution, sale, provision or use of oxo-degradable plastic bags.
	49. Spain ■ Catalonia	 Ban on free disposable plastic bags, including biodegradable and oxo-degradable ones.
North America	50. Canada Leaf Rapids	 Ban on plastic bags.
	Wood Buffalo	 Ban on single-use plastic bags (<571μ) with exceptions.

Area	Country	Details
	Thompson	 Ban on the sale or give-away for free of plastic shopping bags.
	Montreal	 Ban on plastic bags <50μ.
	51. United States of America	
	 American Samoa 	 Ban on the sale and use of petroleum-based plastic bags (some exceptions possible for fresh and frozen products and others).
	Austin, Texas	■ Ban on single-use plastic bags (<101µ).
	Hawaii	 Ban on single-use plastic bags.
Oceania	52. Australia ■ Coles Bay	 Ban on non-biodegradable plastic checkout bags.
	 South Australia 	 Ban on lightweight plastic bags.
	Australian Capital Territory	 Ban on lightweight plastic bags.
	 Northern Territory 	■ Ban on plastic bags <35µ.
	Tasmania	■ Ban on plastic bags <35µ.
	Queensland	■ Ban on plastic bags <35µ.
	53. Papua New Guinea	 Ban on non-biodegradable plastic shopping bags.
	54. Vanuatu	■ Ban on the manufacture, use and import of single-use plastic bags, straws, and polystyrene takeaway food containers.
		 Bags to wrap and carry fish or meat are exempt.
	55. Marshall Islands	 Ban on the importation, manufacture, and use of single-use plastic carrier bags.
	56. Palau	Ban on the importation and distribution of plastic shopping bags.

B. Levy on plastic bags

Area	Country	Details
Africa	1. Botswana	 Levy on retailer. No enforcement upon retailers to charge for plastic bags. Retailers decide if and how much to charge.
Asia	2. Indonesia23 cities	 Levy on plastic bags imposed on customers (equivalent to USD 0.015 (PhP0.77) per bag) at selected retailers.

Area	Country	Details
	3. Malaysia ■ Penang State	 MYR 0.20 (PhP2.44) on plastic bags, in line with the campaign: "No free plastic bags".
	4. Taiwan	 Levy on disposable plastic bags, and tablewares.
	5. Vietnam	 Non-biodegradable plastic bags are taxed by weight at VND 40,000 (PhP87.46) per kilogram (levy on retailer).
Central and South America	6. Mexico ■ Mexico City	 Retailers must charge for plastic bags, which according to the law, must also be biodegradable.
Europe	7. BelgiumNational level	 Levy on consumer to reduce distribution of free plastic carrier bags.
	8. Bulgaria	 Levy on supplier on PE bags <15μ² of USD 0.10 (PhP5.10).
	9. Croatia	 Levy on supplier, with levies to go to the Environmental Protection and Energy Sufficiency Fund.
	10. Cyprus	 Levy on consumer at €0.05 (PhP2.83) for plastic bags in supermarkets.
	11. Czech Republic	 Levy on consumer of plastic bags >15µ. Retailers determine the price, but charge must be at a minimum to cover the production cost of the plastic bags.
	12. Denmark	 Levy on supplier of plastic bags. Fee passed on to retailers, who in turn pass it on to consumers. Currently a bag costs around USD 0.56 (PhP28.57) per bag.
	13. Greece	■ Levy on consumer at €0.07 (PhP3.96) for non-biodegradable plastic bags <50µ.
		 Businesses will be allowed to charge customers for thicker bags up to 70μ.
	14. Hungary	 Levy on supplier. Re-regulation of the environmental protection fee obliged producers and distributors to pay the fee in any case, which they incorporated into the products' price. Retailers voluntarily put a fee on plastic bags.
	15. Ireland	 Levy on consumer for plastic bags, initially set at €0.15 (PhP8.49) and later augmented to €0.22 (PhP12.46). A impact a limit use to a maximum of 21 bags per person
		 Aims to limit use to a maximum of 21 bags per person per year.

 $^{^{2}~~\}mu$ - microns which is the thickness of the plastic bag.

Area	Country	Details
		■ In 2011, legislation allowed the levy to be amended once a year, with a ceiling of €0.70 (PhP39.63) per bag.
	16. Latvia	 Levy on retailer for plastic carrier bags with two different rates for single and multiple use bags and depending on weight.
	17. Malta	 Levy on consumer on all sorts of plastic bags at €0.15 (PhP8.49).
	18. Netherlands	 Levy on consumer.
		 Very lightweight bags for primary packaging are exempt.
		■ Businesses have the freedom to decide how much they will charge, the official guideline is €0.25 (PhP14.15) per bag.
	19. Portugal	■ Levy on supplier. The charge at €0.10 (PhP5.66) per bag between 15-50µ was mostly passed on to the consumer.
	20. Slovakia	 Levy on consumer for plastic bags between 15 and 50μ.
	21. Spain ■ Andalusia	 Levy on consumer for plastic bags at €0.10 (PhP5.66).
	22. Sweden	 Levy on consumer for plastic bags at £0.05 (PhP3.28).
	23. United KingdomNorthern Ireland	■ Levy on consumer for plastic bags at £0.05 (PhP3.28).
	Scotland	 Levy on consumer for plastic bags at £0.05 (PhP3.28).
	England	■ Levy on consumer at £0.05 (PhP3.28) for plastic bags to be charged by companies with 250+ employees and on a voluntary basis for smaller retailers.
North America	24. United States of AmericaChicago, Illinois	 Levy on consumer plastic bags at USD 0.07 (PhP3.57).
	Washington, DC	 Levy on consumer for plastic bags at USD0.05 (PhP2.55).
Oceania	25. Fiji	 Levy on consumer, FJD 0.10 (PhP2.32) per plastic bags.
C. Ban and	levy on plastic bags	

Area	Country	Details
Africa	1. South Africa	 Ban on plastic bags <30μ and levy on retailer for thicker ones.

Area		Country	Details
	2.	Tunisia	 Ban on the production, importation and distribution of single-use plastic bags in major supermarkets and levy on consumers on thicker ones (>50μ).
	3.	Zimbabwe	\blacksquare Ban on plastic bags ${<}30\mu$ and levy on consumer for thicker ones.
Asia	4.	China National level	 Ban on non-biodegradable plastic bags <25μ and levy on consumer for thicker ones.
	5.	Hong Kong	 Ban on free plastic shopping bags (PSB) distribution at all points of retail sales in the territory.
			 Save for exemptions, retailers should charge at least HKD0.50 (PhP3.25) for each PSB provided to consumers.
			 Exemption on PSB use for food hygiene reasons.
			 All plastic bags including flat-top bags are subject to regulation.
	6.	Israel	 Ban on bags <20μ and levy on thicker ones in supermarkets [around USD0.03 (PhP1.53)].
Central and South America	7.	Colombia	 Ban on disposable plastic bags smaller than 30x30 cm and levy on consumer on single-use plastic bags of COP20.00 (PhP0.30).
Europe	8.	Estonia	 Levy on consumer on plastic bags <50μ
			 Exemption on very lightweight bags used to ensure hygiene and prevent food waste.
			 Avoidance of sale or free of charge oxo-degradable plastic carrier bags.
	9.	Italy	 Ban on non-biodegradable plastic bags <100μ, with exemption of reusable plastic bags. Promotion of reusable bags. The ban only became fully effective in 2014.
			 Levy on consumer for lightweight plastic bags in supermarkets and grocery stores, around USD0.025 (PhP1.28) – USD0.12 (PhP6.12).
			 Only biodegradable and compostable lightweight plastic bags are allowed to be provided or sold.
	10	. Lithuania	 Levy on consumer.
			 Prohibition of free lightweight plastic bags with a thickness between 15 and 50μ. Supposed to enter into effect by 31 December 2018.
	11	. Romania	 Levy of €0.05 (PhP2.83) on consumer of non- biodegradable plastic bags .

Area	Country	Details
		Ban on plastic bags $<50\mu$ in supermarkets and $<15\mu$ on national markets.
North America	12. United States of AmericaCalifornia	 Ban on single-use plastic bags and levy on thicker reusable ones of USD0.10 (PhP5.10).
	 San Francisco, California 	 Ban on single-use checkout plastic bags and levy on consumer on compostable bags, recycled paper bags or reusable (>125 uses) bags of USD0.10 (PhP5.10).
	■ Seattle, Washington	Ban on single-use plastic bags, including bags labelled with biodegradable, degradable, decomposable or similar, and voluntary levy on thicker (>57μ) plastic bags.

Note. Foreign exchange rate as of October 30, 2019 (Oanda currency converter) Source of basic data: UNEP (2018) and Environmental Protection Department. (n.d.) for Hong Kong

Annex B
Summary of plastic bag ordinances in selected LGUs in the Philippines

A. Ban on plastic bags

LGU	Ordinance No.	Features	Exemptions
1. Antipolo City, Rizal	Ordinance No. 2009-370 (October 5, 2009)	 No business establishment shall utilize plastic bags as primary packaging material on dry goods. No business establishments shall offer or sell plastic bags to be used as secondary packaging material or as primary packaging on dry goods. No business establishment shall use Styrofoam and other similar materials as containers for food, produce, and other products. Plastic bags discarded or other similar plastic waste materials will not be included in the collection of non-biodegradable wastes. These materials must be claimed and dried prior to submission to their respective barangays for proper disposal. 	 Business establishments dealing on wet goods shall use plastic bags as primary packaging materials only. One year after the two-year moratorium period of this ordinance, all establishments may be required to use environmentally friendly packaging materials as their primary containers for their wet products.
2. Bacolod City, Negros Occidental	City Ordinance No. 562 (October 5, 2011)	 No business establishment, fastfood outlet, market vendor, food kiosk, sari-sari store, ambulant vendor, and the like shall utilize, sell or provide plastic bags and/or sando bags as packaging materials to customers. In lieu of single-use plastic sando bags, stores and other retail establishments shall provide, for free, any alternative legally-compliant packaging material to customers, such as but not limited to the following alternative packaging materials: Reusable bags, woven bags (bayong), cloth bags, rattan baskets, shopping bags made from recycled waste paper and other bags made out of 	 Plastic bags with no handles, holes or strings commonly used as primary packaging for wrapping unpacked fresh foods at supermarkets, wet and dry markets, restaurants, canteen, and the like as the usage of such plastic bag is justified on the grounds of public hygiene. Biodegradable plastic bags subject to any future national legislation and in compliance with a PNS promulgated by the DTI, DOST, and other agencies concerned.

	LGU	Ordinance No.	Features	Exemptions
			biodegradable materials (e.g. banana leaves, taro leaves, water lily, corn stalk, etc.).	
3.	Baler, Aurora	Ordinance No. 002-2011 (June 1, 2011)	 Ambulant vendors are prohibited to sell items using non-biodegradable plastics, cellophanes, styrofoams, and styropor. Goods sold in the municipal public market, such as fresh meat, fish, fruits, vegetables, and the like, shall be packed only in biodegradable or environment friendly bagging containers or such other bagging materials such as biodegradable plastic bags, baskets/bayong or other sturdy reusable bags, boxes or crate or containers made of cloth and/or indigenous materials for use as bagging and packing materials. Vendors, agents or delivery men engaged in the sale of non-biodegradable plastic bags shall not be allowed to sell or distribute the same or unload or make any delivery of non-biodegradable plastics and cellophanes, styrofoams, and styropors or similar items in any establishment in the municipality. Factories and establishments engaged in the manufacture of non-biodegradable plastic bags, cellophanes, styrofoams, and styropors are prohibited to be established in the municipality. Business establishments, institutions, hotels, inns, catering services, schools, recreation centers, and canteens are prohibited to use non-biodegradable styrofoams, clamshells, and glasses/cups. 	 Food items with liquid consistency may be placed in biodegradable plastics with a maximum length of 12 inches and a width of 5 inches (12 x 5) in its unexpanded form. Items such as flour, sugar, and coffee, maybe packed in biodegradable plastics with a maximum length of 12 inches and a width of 5 inches (12 x 5) in its unexpanded form.

	LGU	Ordinance No.	Features	Exemptions
4.	4. Batangas City	Ordinance No. 16, s. 2010 (December 10, 2010)	• The use of plastic bags as packaging materials for dry goods is prohibited. All business establishments shall pack dry good products in biodegradable materials such as recycled product carton boxes, and paper bags.	
			 Dry goods maybe packed in plastic bags or non- biodegradable packing materials provided that such packing materials were supplied by the costumers. 	
			• The use of plastic bags on wet goods (e.g. fresh fish., meat products) is regulated. Plastic bags maybe used for such products as a primary packaging material.	
			 No business establishment shall offer or sell plastic bags to be used as secondary packaging material or as primary packaging on dry goods. 	
			 The use of styrofoam as packaging materials or as containers for food, fruits, and vegetables containers is also prohibited. 	
5.	Bauan, Batangas	Ordinance No. 11- 08-0034 (August 10, 2011)	• Prohibits retail/business establishments from providing plastic carry out bags or selling of polystyrene foams to customers at the point of sale to transport items.	
			 Reusable bags, recyclable paper bags, and compostable or biodegradable bags, including biodegradable plastic bags, are allowed alternatives. 	
6.	Caloocan City	Ordinance No. 0503, s. 2013 (September 17, 2013)	• All affected retail/business establishments within the jurisdiction of Caloocan City are prohibited from selling,	 Primary packaging of products and such other packaging which forms part of the actual

	LGU	Ordinance No.	Features	Exemptions
			 providing, and using non-biodegradable materials such as polystyrene and plastic bags as secondary packaging on dry and wet goods. Plastic used for packing fresh wet goods directly purchased in wet markets are considered secondary packaging and, therefore, must be biodegradable or oxo-biodegradable. 	product per se since acceptable alternative packaging is not yet commercially available. • Such products include, but not limited to, snack foods, frozen foods, hardware items, bottled water or soda, juice drinks, cooking oil, plastic sachet products containing soap, shampoo and conditioner, cosmetics, and the like.
7.	Candon, Ilocos Sur	Ordinance No. 694 (August 3, 2015)	 The use of plastic bags lower than the regulated thickness of 15 microns by commercial establishments and vendors in talipapa, tiangge, hawkers, and the like is prohibited. One plastic bag policy. Commercial establishments and vendors in talipapa, tiangge, hawkers, and the like shall only use one plastic bag as primary packaging material. No commercial establishment and vendor in talipapa, tiangge, hawkers, and the like shall use plastic bags as secondary packaging material. For secondary packaging material, they shall use paper bags. No business establishment shall 	• Plastic bags with no handles, holes or strings commonly used for wrapping unpacked fresh foods and cooked foods at supermarkets, wet and dry markets, restaurants, canteen and the like as the usage of such plastic bag is justified on the grounds of public hygiene.
			offer or sell plastic bags to be used as secondary packaging material. However, they may sell reusable bags as carryout bags for secondary packaging material.	
8.	Gubat, Sorsogon	Ordinance No. 2013-002 (February 18, 2013)	 No business establishment shall: Utilize plastic bags either secondary or primary packaging materials on dry 	 Primary packaging materials except sando bags. Buying public is

	LGU	Ordinance No.	Features	Exemptions
			goods or provide customers with plastic bags for the purchase items. > Utilize or provide plastic bags as secondary packaging materials on wet goods. > Use styrofoam/styrophor and other similar container for food, produce, and other products.	encouraged to bring with them alternative packaging materials such as "bayong," "ringka," cloth bags and "alat" and other recyclable bags while in the public and private markets.
			Sell or provide customers with sando bags and offer or sell plastic to be used as secondary packaging materials or as primary packaging material on dry goods.	
9.	Iriga City, Camarines Sur	Ordinance No. 2012-012 (November 12, 2012)	 Business establishments and/or individuals are prohibited from: Selling and providing plastic bags to consumers either as primary or secondary packaging materials on all goods or products; Selling and providing styrofoam/styropor as containers; The use of plastic and disposable plastic cups as container for food, beverages, and other products; and Bringing plastic bags used as packaging material or 	
			 styrofoam/ styropor used as food containers within the city. Plastic bags discarded or other similar plastic waste materials must be cleaned and dried prior to submission to their respective barangays for proper collection and disposal. 	

LGU	Ordinance No.	Features	Exemptions
10. Kabacan,	Ordinance No. 2011-08	• Prohibited acts:	
Cotabato		 Selling and providing plastic bags to customers as secondary packaging materials on wet goods, and as Prohibited acts: 	
		Selling and providing plastic bags to customers as secondary packaging materials on wet goods, and as packaging material on dry goods;	
		Selling and providing straw for softdrinks;	
		Using styrofoam as containers for food; and	
		Disposing of plastic wastes.	
		• Regulated acts:	
		Business establishments dealing on wet goods shall use plastic bags as primary packaging material only.	
		Styrofoam used as ice chests, insulators and/or for any similar purposes may be allowed.	
11. Malay, Aklan	Ordinance No. 320, s. 2012 (April 24, 2012)	• Business establishments and/or individuals are prohibited from:	
		 Selling and providing plastic bags to consumers as secondary packaging material on wet goods; 	
		 Selling and providing plastic bags to consumers as primary packaging material on dry goods; and 	
		 Selling and providing styrofoam/styrophor as containers. 	
		 No business establishment shall offer or sell plastic bags to be 	

LGU	Ordinance No.	Features	Exemptions
		used as secondary packaging material or as primary packaging material on dry goods.	
		 Discarded plastic bags or other similar plastic waste materials must be cleaned and dried first prior to proper disposal and collection. 	
12. Mandaluyong City	Ordinance No. 523, S-2013 (November 11, 2013)	 The use of plastic bags and styrophors shall be phased-out and regulated in the following manner: First year – use of plastic bags and styrophors in all establishments is prohibited every Mondays and Wednesdays (April 20, 2012 – April 19, 2013); 	
		 Second year – use of plastic bags and styrophors in all establishments is prohibited every Mondays through Fridays (April 20, 2013 – April 19, 2014); and Third year – total ban of use of plastic bags and 	
13. Quezon City	Ordinance No. SP-2868, S-2019 (September 30, 2019)	 styrophors (April 20, 2014 – onwards) Phase one – a total ban on the distribution of plastic bags shall be immediately implemented by all shopping malls, supermarkets, department stores, grocery stores, fast food chains and food stalls, restaurants, drug stores, pharmacies, and other similar retailers. Phase two – a year after the effectivity of this Ordinance, there shall be a total ban on the distribution of brown bags in all shopping malls, supermarkets, department 	• Plastic bags with no handles, holes or strings which shall be exclusively used for wrapping unpacked fresh foods and cooked foods at supermarkets, wet and dry markets, and other Type II retailers, restaurants, canteens, and the like, as the usage of such plastic bag is justified on the grounds of public hygiene.

LGU	Ordinance No.	Features	Exemptions
		stores, grocery stores, fast food chains and food stalls, restaurants, drug stores, pharmacies and other similar retailers operating in the City.	• Medicine bag – reusable bag or medicine kit appropriate to carry small quantity of medicines such as tablets and capsules, bottled syrups/ suspensions and the like applicable for drugstores and pharmacies.
	Ordinance No. 2876, S-2019 (September 30, 2019)	• Restaurants and hotels are prohibited from distributing single-use plastic/disposable materials such as but not limited to plastic spoon and fork, knives, plastic/paper cups, plates, plastic/paper straws, coffee stirrers, and other single use plastic/disposal materials and styrofoam to customers/ clients who are dining in.	
		 Hotels are prohibited to distribute soap, shampoo, shower gels, liquid soap, conditioners and other items used for hygienic purposes in sachets and single used containers. 	
14. San Carlos, Negros Occidental	Ordinance No. 14- 53 (October 23, 2014)	• Business establishments, fastfood outlets, market vendors, food kiosks, sari-sari stores, ambulant vendors, and the like are prohibited from using plastic cellophanes and sando bags as packaging materials for customers.	
		• In lieu of single-use plastic cellophanes and sando bags, stores and other retail establishments are mandated to use any alternative legally compliant packaging material for customers, such as but not limited to the following:	

LGU	Ordinance No.	Features	Exemptions
		Reusable woven bags (bayong), cloth bags, rattan baskets, shopping bags made from recycled waste paper and other bags made out of biodegradable materials (e.g. banana leaves, taro leaves, water lily, corn stalk, etc.)	
15. Santa Rosa, Laguna	Ordinance No. 1720-2011 (July 6, 2011)	 Six months after the effectivity of the Environment Code of the City of Santa Rosa, Province of Laguna, no business establishment and vendor shall: Provide plastic bags to their consumers for the carrying and transport of dry goods; Use styrofor and other similar materials as containers for food produce and other products; and Offer or sell plastic bags and 	
		styrofor.	
16. Tres Martires City, Cavite	Ordinance No. 007-2012 (April 10, 2012)	 Prohibited uses of plastic bags: As packaging material and as container for dry goods; As packaging for wet goods; Use of non-plastic wares for food as containers and packaging material such as styrofor for food and drinks including plastic utensils such as spoon, fork, and knife for dine in and especially for take out customers; Use of plastic couch (commonly used for ice making) and drinking straw for beverages such as soft drinks like "palamig" and "gulaman"; 	Plastic products that will end up as recyclable/reusable wastes may be allowed such as plastic cups (commonly regarded as HI or High Impact), ice cream cups, egg trays, spoon and fork.

LGU Ordinance No. Features Exemptions

- Use of plastic bags as garbage bag; and
- Use of plastic as flaglets and "banderitas" in all occasions.
- Regulated uses of plastic bags:
 - Plastic labo bags may be used for wet goods as primary container. Use of a plastic bag as container for wet goods shall be optimized, i.e., the smallest size possible to contain said wet good shall be provided otherwise, two or more wet goods shall be contained and provided further that contamination as to waste or flavor and food safety allows.
 - ➤ Wet goods that are already pre-conditioned in plastic wraps, pouches, bag, and the like as part of the product's packaging materials such as frozen products, shall not be contained further in plastic bags.
 - Other wet goods that are not pre-contained in plastic pouches, wraps or bags are preferably to be contained in customer supplied "reusable" pre-cleaned and sanitized hard plastic containers.

Oil plastic bottles shall be reused at all times since they do not usually end up as recyclable waste: other plastic bottles that are not acceptable at "buy back centers" like central Materials Recovery Facility or junkshops shall be reused and should not end up as residual waste.

LGU	Ordinance No.	Features	Exemptions
		Sacks and other similar bags shall be reused as garbage bags. Garbage collectors shall return the sacks for further reuse as garbage bags.	

B. Ban and levy on plastic bags

	LGU	Ordinance No.	Features	Exemptions
1.	San Mateo, Rizal	Ordinance No. 054-S-2017 (August 15, 2017)	 Distribution of plastic bags by relevant retailers lower than the regulated thickness of 15 microns is prohibited. Consumers who will not bring with them "reusable bags" and/or redeem "used plastic bags" for a new plastic bag, shall be charged with a "plastic recovery system fee". All shopping malls, supermarkets, department stores, grocery stores, fast food chains, drug stores, and pharmacies shall charge and collect a fix amount of P2.00 per plastic bag regardless of its size. Stall owners/lessees in wet and dry markets will not be allowed to directly distribute plastic carryout bags with handles, holes or string usually made from HDPE, LDPE/LLDPE, and PP plastic materials. All shopping malls, supermarkets, department stores, grocery stores, fastfood chains, drug stores, pharmacies, and wet and dry markets shall provide reusable bags as carryout bags 	• Plastic bags with no handles, holes, or strings commonly used for wrapping unpacked fresh foods and cooked foods at supermarkets, wet and dry markets, restaurants, canteens, and the like, as the usage of such plastic bag is justified on the grounds of public hygiene.
			to be purchased by the consumer for a minimum fee.	

	LGU	Ordinance No.	Features	Exemptions
			➤ It will be made available in the respective checkout counters of the stores, purposely for multiple re-use and to reduce the use of plastic bags as carryout bag.	
2.	Siquijor	Ordinance No. 06- 2018 (October 30, 2018)	• No free plastic bags on dry and wet goods: Large – P4.00, medium – P3.00, tiny – P2.00, and micro and "selopin" – P0.50.	
			• Prohibits the use of plastic bags for secondary packaging, the use of "selopin" for cooked food and in "automatic tubig machines", and the use and selling of styro and disposable containers.	
			• Imposes "Plastic Holiday" on Sundays – Strictly no use/selling of all plastic bags on Sundays.	
3.	Valencia, Bukidnon	Ordinance No. 25- 2017 (June 1, 2019)	• Distribution of plastic bags with thickness lower than 15 microns is prohibited.	• Plastic bags with no handles, hole or string shall not be included under the scheme as the usage of such bags are justified on the ground of public hygiene.
			• Consumers shall bring reusable bags, otherwise, redemption of new plastic bag shall be charged with a "Plastic Recovery System Fee".	
			Prohibition of market stall owners to directly distribute/use plastic bags.	

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