

CHINESE BAN ON IMPORTATION OF WASTE PRODUCTS: A FOCUS ON THE FUTURE OF PLASTIC WASTE*

Abstract

Over the years, the world has witnessed an ever increasing use of plastics. This is because plastic is ‘versatile, lightweight, moisture resistant, strong and relatively inexpensive.’¹ For a long time, due to factors such as trade imbalance, many states have found it cheaper to ship plastics abroad rather than properly deal with it themselves. China has been one such destination, taking in as much as ‘40 percent of US citizens’ recycles alone’² This essay takes an in-depth look at why China decided to stop importation of waste products from January 2018, and the impact of such a decision within plastic exporter nations. This paper also examines new legislation to fashion out more sustainable ways to deal with plastic to build stronger economic indices within producer nations. Finally, the essay recommends that corporate groups, individuals and the government must be more involved in curbing the over use of plastics and extensive production of new plastics and instead increase use of other bio gradable alternatives such as seaweeds.

Keywords: Chinese Ban, Importation of Waste Products, Plastic Waste

1. Introduction

The use of plastics has been on the rise for so many decades now. This is because ‘plastic is relatively cheap and versatile with many industrial applications, leading to exponential growth over the past century, a trend that is set to continue’.³ Another factor fuelling the demand for plastics is population growth in countries like India, China, Brazil, Indonesia and most developing countries. It has been shown that the world’s population is forecast to grow by 790 million every decade and may reach over 9 billion by 2050.⁴

One other factor driving the monumental use of plastics is the rise of the packaging sector- with a rise of above 24 percent in Europe alone; this trend is compounded by lack of packaging product design that is amenable to waste management.⁵ With all the aforementioned trends, ‘it is estimated (under a business as usual scenario) that 66.5 Mt of plastic will be placed on the EU market in 2020 and global production could triple by 2050’⁶ However, some inherent qualities of plastics create upheavals for waste management. This can be traced to its durability which makes it persist in the environment for very long time. Previously, China used to be the biggest importer of plastic waste. But by July, 2017, it sent a notification to the World Trade Organization (WTO) that by the end of 2017 it will ban several forms of waste products including plastic products. Other wastes mentioned for ban were vanadium slug, unsorted waste paper and ‘waste paper textile materials’⁷. China’s appetite for waste importation was predominantly aroused by its industrial boom. Since it needed a huge amount of waste to convert into raw materials, it led to the rise of recycling plants. These products are recycled by the Chinese to make materials such

* **Maureen Ngozi AGBASI, BA Philosophy, LLB (UNILAG) BL, LLM (UNILORIN)**, Lecturer, College of Law, Afe Babalola University Ado-Ekiti (ABUAD) Email: maureenagbasi@yahoo.com

¹ C Le Guern ‘When the mermaids cry: the great plastic tide’ <http://plastic-pollution.org/> accessed on April 23 2018

² E E Phillips, ‘Oh scrap: China, the biggest buyers of American trash wants no more’ Wall Street Journal, [www.wsj.com/articles/america-is-no-1-in-](http://www.wsj.com/articles/america-is-no-1-in-taken-from-claire-arkin-recycling-is-not-enough-we-need-bold-solutions-to-deal-with-our-plastic-overproduction-problem) taken from Claire Arkin, ‘Recycling is not enough: We need bold solutions to deal with our plastic overproduction problem’ www.thisland.org/journal/index.php/elist/el accessed 01 June 2018

³ The European Commission: GREEN PAPER on ‘European strategy on plastic waste in the environment’, Brussels, 7.3.2013 COM (2013) 123 Final www.ab.gov.tr/files/ardb/evt/greenpaper-march-2013 accessed 29 May 2018

⁴ *ibid*, citing WBCSD, Vision 2050 <http://www.wbcsd.org/templates/TemplateWBCSD5/LAYOUT.ASP?TYPE=p&Menu=MTYxNg&dope>.

⁵ BOIS, ‘Plastic waste in the environment’ final report, European Commission, November 2010 <http://ec.europa.eu/environment/waste/studies/pdf/plastics.pdf>

⁶ T Worpel, J Van den Akker, J Pops, T Wolde, ‘Plastics do not belong in the ocean: Towards a roadmap for a clean North Sea’ IMSA Amsterdam (2011) 39

⁷ B Kaur ‘World at a loss as China bans import of plastic waste’ www.downtoearth.org.in/news/world-at-- accessed on 12 February 2018

as cardboard and yarn which are resold abroad at profit.⁸ In 2017, it imported US\$18 Billion worth of waste. Of this amount, plastic represented 7.3 Million metric tons. This represents 56% of the world's total and is valued at US\$3.7 billion.⁹ Because plastics are light, they are used in cars and planes as they save fuel and cut CO2 emissions. It is felt that plastics contribute to food safety and reduces waste.¹⁰ Despite this versatility amongst others plastics were amongst the items banned by the Chinese government in January 2018.

The main reason given for the ban was the composition of the products – it was discovered that hazardous waste which could mar China's environmental interests were mixed up with the waste, and as such lowered the quality of raw materials that could be recovered from the waste.¹¹ A research by Shantou University Medical College found that 80 percent of children in Guiyu, Guangdong province which was the 'world's largest electronic waste dump' had excess levels of lead in their blood streams. More so, there was rising concern that an increasing amount of waste was going to landfills, rather than recycling plants.¹²

Waste that was found not to be useful for Chinese economic purposes was dumped into landfills and bodies of water or incinerated, causing peculiar environmental fallouts in the long run. However it seems clear that the major reason informing the ban on some categories of waste products have to do with the presence of hazardous waste in the imports. In its letter to WTO, China, in giving reason for the ban stated by its Ministry of Environmental Protection that:¹³

We found that large amounts of dirty wastes or even hazardous waste are mixed in the solid waste that can be used as raw materials. This polluted the environment seriously... To protect China's environmental interests and the people's health, we urgently adjust the imported solid waste list, and forbid the import of solid waste that are highly polluted

2. EFFECT OF THE BAN ON PLASTICS

The effect of the ban on importation of plastics is already being felt within china and former exporter nations. Many recycling plants are struggling; some with deficit of raw materials, and others with intense accumulation and build-up of same.

Effect of the ban within China

Some of the resultant effects of the ban within China of imported waste are that recycling companies are having a shortfall of materials for their plants. This is because the domestic market can only supply about one quarter of the inputs used within China. The only way to bridge this gap is to source for such plastics outside the country, especially from Southeast Asia at more exorbitant prices.¹⁴ The ban has had its impact on high end areas like Luwang, an area densely populated by recycling firms. Many of them who could not cope in the aftermath of the ban had to close down their factories. In order to lessen their losses, they were paid a subsidy of '30 percent of the cost of their equipment in return for closing'. Many others moved to the cities for paid employment. The one good outlook being that the pollution from the smell of melted plastic no longer hugs the villages and 'now the village is relatively odourless.'¹⁵

⁸A C Koty 'China bans import of foreign waste to combat pollution' www.chinabriefing.com/news/2017/10/24/china-ban-imports- accessed on 12 February 2018

⁹ *ibid*

¹⁰ European Commission, 'communique from the Commission to the European Parliament, the Council, the European Economic and SOC Committee and the Committee to the Regions' (Brussels, 16: Jan, 2018 COM (2018) 28 Final ec.europa.eu accessed 27 May, 2018

¹¹ Kaur (n 7)

¹² R W Yuniar, 'Journey to the waste: has the West learned its lesson from China's plastic ban?' www.scmp.com/week-asia-politics/article/2132 accessed April 20, 2018

¹³ Koty (n 8)

¹⁴ T Hancock 'China recyclers grind to a halt amid crackdown on imported waste.' <http://www.ft.com/content/63c/220c/> from Financial Times accessed on April 23 2018

¹⁵ *ibid*

A cursory look at the effect of the ban on former plastic exporter nations

Impact of China's ban of importation of plastic on UK recycling plants

For a very long time, the UK exports two thirds of its yearly waste which amounts to about 500,000 tonnes. China's ban on importing millions of tons of plastic waste is already being felt at recycling plants around UK. Especially apparent is that lower grade plastics are piling up in the recycling plants, according to Simon Elin – Chief Executive of the UK Recycling Association and it is not obvious how to tackle it.¹⁶ According to a report by the new telegraph on January 1, echoing the views of some environmental experts. 'The recycling rates are unlikely to rise much above current levels, which would have the UK six millions tonnes short of treatment capacity by 2030'¹⁷The UK had earlier pledged to develop 'ambitious new future targets and milestones' as part of its 25year-environmental plan initiated in January. The crux of the action plan was to re-cycle '65% of urban waste by 2035' with the support of the European Council and Parliament.¹⁸ However, documents unearthed by Greenpeace reveals that the government may not be able to meet the recycling targets of 2035, as indices indicate it might not meet its 50% target of 2020. Either way, it is hoped that UK's exit from the European Union (EU) will enable them meet their recycling targets – this is especially in view of China's ban on importation of waste.¹⁹

Impact of China's ban of importation of plastic within Australia

Within Australia, the operators hope the ban will usher in a season of opportunities to take responsibility for their 'own waste transition to a cleaner economy.'²⁰ Gayle Sloan, the spokesperson of the Waste Management Association of Australia (WMAA) sees it as an opportunity to create a 'circular economy'; one which re-integrates material things in recycling, and ploughs them back to the economy. They admit that alternate solutions may be more expensive and that they may have to 'renegotiate their contracts with local councils so rate payers could end up footing the bill' The price of recycled materials have also collapsed since the ban because the market has been flooded with all sorts of low grade recyclable items.²¹

There is also the perception within Australia that recycling is not a federal but a state issue, and that it is the responsibility of 'state, territory and local governments.' As things stand now, there may not be many resources from the Federal purse going towards the waste projects. Since the likely alternative will be to send materials to landfills with its attendant environmental outcomes, Australia may have no choice but to join nations like Japan and Europe in moving towards a circular economy. The way to do this is to put waste back into the productive economy and create jobs in the process.²²

Where is likely to be the new plastic destination?

So where would be the new plastic destination after China? Some have suggested that India could become the new plastic waste destination. Though this would result in a boom for the informal sector in India, it remained to be seen whether the infrastructure and capacity to absorb such enormous waste is available. Many of the recycling plants in India are not covered by statutory permission that could enable them enlarge their operations to accommodate the new waste inflow.²³ In the wake of China's ban on importation of waste products, many Southeast Asian recyclers have come up. Countries such as Indonesia, Malaysia, and Vietnam seem set to become the new plastic waste

¹⁶ *ibid*

¹⁷ Kaur (n 7)

¹⁸ D Carrington, 'UK opposes strong EU recycling targets despite plastic pledge' www.theguardian.com/environment/ accessed on 24 January 2018

¹⁹ *ibid*

²⁰ Phil Lasker, Jenya Golubeva, Bill Biirtles, 'China ban on foreign waste leaves Australian recycling industries eyeing opportunities'. www.abc.net.au/news/2017-12-10/china-ban-on-foreign-rubbish-leaves-recycling-industry-in-a-mess/9243184 accessed on 29 May 2018

²¹ *ibid*

²² *ibid*

²³ Kaur (n 7)

destinations, following Chinese ban on 24 categories of imported waste of January 1, 2018.²⁴ But the question now is whether these new destinations have overstretched themselves.

The Belgium- based Bureau of International Recycling (BIK), estimates that Vietnam imported 550,000 tonnes of scrap plastics last year, up from 339,648 tonnes in 2016, the most in the region. Malaysia came second with 450,000 tonnes, up from 287,670 in 2016, while Indonesia accepted 200,000 tonnes, up from 120, 981. Thailand accepted 100,000 tonnes.²⁵

Such massive imports have resulted in partnerships, and joint ventures between Chinese investors and several recyclers, according to a report from BIK. Also, to enable these countries cope with the new influx of recycling activity, there has to be a commensurate increase in ‘infrastructure and management capabilities’. Even the big question remains as to whether they are taking on a lot too soon. An insider from BIR, Surenda Patawari Borad, chairman of the Plastics Commodity Committee at BIR asserts that ‘the quotas of the recycling companies in Southeast Asia are limited.’²⁶ This is substantial because these Southeast Asia countries generate a huge amount of plastic waste; such as bags, straws, coffee stirrers, water bottles and food packaging. Such plants located in these areas cannot do much without reviewing their licenses.²⁷

3. ALTERNATIVES TO EXPORTING TO CHINA OR OTHER DESTINATIONS

Traditionally, there have been many alternatives to recycling of plastics when it comes to disposal of such products. These persist today despite the fact that such options like incineration and transfer to landfills come with attendant environmental fall outs. We may briefly examine some of these alternatives:

Incineration

It is suggested that once the Chinese refuse to accept such plastic waste, it could go for energy recovery or incineration. Because they are fossil -fuel based they could be invested as alternate source of energy generation by such nations and improve self-sufficiency.²⁸ Burning plastics in incinerators is a trend that is often termed ‘waste to energy.’ Facilities that engage in such practices classify themselves as ‘renewables.’ But the drawback is that plastics have a heavy fossil content, so burning plastics in incinerators or creating energy in the so called ‘waste to energy’ facilities causes harmful emissions including persistent organic pollutants, heavy metals and greenhouse gasses , thereby raising serious climatic change concerns.²⁹

Landfills

Plastic can be buried in landfills. This is a method that not only keeps the plastic out of sight, but is also odourless. The issue here though is that the plastic may be buried with other forms of waste, thereby leading to chemical reactions. Another option apart from dumping them at landfills may be to keep them in storage. However, the issue here is that due to chemical reactions, such stored items may combust over a period of time.³⁰

Dumping plastics in the oceans

Plastic is a very versatile product. However the down side is that despite its many uses, it is very difficult to degrade. In the EU, the amount of plastics that enter the oceans is about 150,000 to 500,000 tonnes every year.³¹ A

²⁴ Yuniar (n 12)

²⁵ *ibid*

²⁶ Yuniar (n 12)

²⁶ *ibid*

²⁷ *ibid*

²⁸ Christine Cole, (The Conversation UK) ‘China bans foreign waste – but what would happen to the world’s recycling?’ www.scientificAmerican.com/article/china accessed 20 April, 2018

²⁹ C Arkin, ‘Recycling is not enough: We need bold solutions to deal with our plastic overproduction problem’ www.earthisland.org/journal/index.php/elist/el accessed 01 June 201

³⁰ Cole (n 28)

³¹ European Commission, <http://ec.europa.eu/environment/marine/good-environmental-status> ec.europa.eu accessed 27 may 2018

study qualified the amount of plastics that end up in the oceans to be about 8 million metric tons, annually.³² It is estimated that by 2025 the cumulative input would almost double the 8 million metric tonnes input.³³ The resultant effect of this is seen in:

- i) the amount of great plastic debris on the various beaches; even the remote and isolated ones;
- ii) the death of aquatic life such as sea lions and whales from the ingestion of plastics which they mistake for food, because their colours resemble their food. These plastics cause death by interfering with their digestive systems.
- iii) Plastics are considered not biodegradable as revealed by a study carried out by Dr. Richard Thompson at the University of Plymouth UK. He found from such study conducted on the beaches of ‘the Americas, Australia, Africa and Antarctica’ that even when the plastics do degrade, they do so in very small fragments that cannot be seen by the human eye. These are ingested by marine animals and 200 plankton (this consists of ‘tiny animals such as rotifers, copepods and krill’ He therefore concludes that ‘this plastic micro – pollution with its inherent toxicity and consequences on the food chain had yet to be studied...’³⁴ It is not yet very clear whether such plastic micro pollution interfere with health of humans as well.
- iv) Plastics are dangerous because they contain a large proportion of chemical additives such as ‘plasticizers, colorants, stabilizers, processing aids, flame retardants, peroxides and antistats, each representing a whole family of chemicals.’ Because of this potent mix of chemicals, when the plastic eventually degrades into micro-plastics, they are dangerous to marine life when ingested.³⁵

4. RECENT LEGAL FRAMEWORK ON PLASTICS AND RECYCLING

Chinese ban effectively strengthened national legislation and control measures were put in place. The ban enabled nations build capacity by gaining a more robust expertise chain which “includes customs, police, environmental enforcement officers, prosecutors, and judges to address waste crimes.” This has also led to a credible interface between waste producers and waste management companies to agree upon business standards that are environmentally sound.³⁶

Framework Directive on Waste 2008/98/EC³⁷

This directive from the European Commission establishes extended producer responsibility as a key principle in waste management. It also sets out the waste hierarchy giving precedence to waste prevention, reuse and recycling over recovery, including energy recovery, and disposal. Article 8 in particular establishes ‘strong and innovative drivers for sustainable production taking into account the full cycle of products.’ More so it emphasizes that it is the responsibility of producers to set up ‘acceptance points for end of life products.’³⁸ MP’s in the UK are also of the opinion that there is a necessity to apply the polluter pays principle such that those who produce the waste should ‘bear the cost of managing it.’³⁹

Packaging Directive 94/62/EC⁴⁰

This directive gives specific recycling targets for plastic packaging. As such, there should be ‘Producer responsible obligations’ such that in order to avoid high cost of recycling, those who design plastics should come up with easier to recycle packaging or face fee chares for putting difficult to recycle material on the market. MP’s in UK also decided that by 2023 a law should be in place that all plastic bottles have to have 50% portions that can be recycled. This will reduce the amount of plastics sent to landfill or incinerators.⁴¹ With the EU’s Plastic Strategy in

³²Journal of Science , February 2015 conducted by a scientific working group at UC Santa Barbara’s National Center for Ecological Analysis and Synthesis (NCEAS)

³³Guern (n 1)

³⁴Guern (n 1)

³⁵The European Commission (n 3)

³⁶I. Rucevska, C. Nellemann, N.Isarin, W.Yang et all, ‘Waste Crime – Waste Risk Gaps in meeting the global waste challenge’ A UNEP Rapid Response Assessment. United Nations Environmental Programme and Grid – Arendal, Nairobi and Arendal, www.grida.no accessed 23 April, 2018

³⁷The European Commission (n 3)

³⁸ibid

³⁹S Laville, ‘Make supermarkets and drink firms pay for everyday recycling, says MP’s.’ www.theguardian.com/environment/2017 accessed 24 January 2018

⁴⁰The European Commission (n 3)

⁴¹Landbell Group ‘China restricts waste imports – an opportunity for the European Economy?’ www.landbell-group.com/china-restricts- accessed 24 April 2018

place, a new area of innovation will tremendously improve plastic packaging. The European Commission hopes that ‘by 2025 at least 55% of all plastic packaging in the EU should be recycled.’⁴²

Classification Labelling and Packaging Regulation 1272/2008/EC (CLP)

This legislation ‘allows identification of hazardous chemicals and informs users about these hazards.’ This is reflected by directives such as symbols and phrases on the packaging labels.⁴³

REACH Regulation 1907/2006/EC

This legislation facilitates the placing on the market of recycled materials. Its goal is to monitor and decrease potential hazards with certain forms of plastic.⁴⁴

Stockholm Convention on Persistent Organic Pollutants (POP’s)

This legislation restricts ‘the use of commercial flame retardants such as penta and octa bromodiphenylether (BDE). The Convention also prohibits the recycling of materials containing POP’s such as some brominated flame retardants.’⁴⁵ Such legislations will check the toxicity of the plastics when finally disposed.

Water Industry Act 1991

Within the UK, another recommendation is to amend the Water Industry Act, 1991 to enable water companies erect water fountains in place of plastics packaging.⁴⁶ According to the Jan Patrick Schulz of Landbell Group, ‘The import ban, as well as increasing EU-wide cycling rates will lead to a focus on the development of recycling solutions in individual countries.’⁴⁷ He foresees a situation that ‘secondary raw materials return to the market as additional resources’. In this way, companies can be assured of supplies, rather than looking to foreign markets for such supplies.

Regional Conventions

There are many Regional Conventions which are geared towards a better marine environment by 2020 and they include the under listed. Their goal is to reduce the amount of plastics that pollute the ocean. Most of them are subject to review by the EC.

- i. SPAR;
- ii. Barcelona;
- iii. Helcom and
- iv. The Black Sea

5. Managing Plastic Waste to Increase Economic Indices by Various Sectors of the Economy

European Union

The European Commission lends its weight to the debate on plastics. While they acknowledge the numerous roles that plastics play in our lives, they also recognise the harmful input on the environment. They acknowledge that merely recycling plastics may not represent the best alternative for a more rounded use of plastics.⁴⁸ ‘On January 16th the European Commission adopted the first Europe -wide strategy on plastics which is part of the transition towards a more circular economy. The aim is to protect the earth, people and economies.’⁴⁹ We may try to understand the EU’s stand on role of plastics for a more ‘rounded circular economy.’⁵⁰ They are concerned that for an industry that gives employment to about 1.5 million people across Europe, only 5 percent of the plastic packaging value is retained in the industry, ‘while the rest is lost after a very short use. The annual bill accounts for between 70 and 105 billion Euros.’⁵¹ The Euro-wide strategy on plastics will therefore take advantage of the single

⁴² The European Commission (n 10)

⁴³ The European Commission (n 3)

⁴⁴ *ibid*

⁴⁵ *ibid*

⁴⁶ Laville (n 39)

⁴⁷ Landbell Group (n 41)

⁴⁸ Europarc Federation , ‘EU STRATEGY ON PLASTIC WASTE –paving the way forward towards a circular economy’ www.europarc.org/news/2018/01/european-strategy accessed on 23 May 2018

⁴⁹ *ibid*

⁵⁰ *ibid*

⁵¹ *ibid*

market in the EU to curb waste, drive investments and ensure innovations. This will involve mobilising all facets of the private sector. Individuals would also be sensitised to change behaviour to fit the new business model.⁵²

The highlights to drive this new business model would include reuse, repair and recycling strategies. Such model would have a focus to reduce atmospheric carbon by evolving a more energy efficient environment in tandem with the 2030 Sustainable Development Goals of the Paris Agreement amongst others. Most importantly, later in 2018, the EU would push for better regulations as regards single use plastics.⁵³

In line with its move towards a more circular economy, the EU has come up with a review of its packaging legislation with 'new rules to increase the demand for plastic content and the development of advanced recycling facilities.'⁵⁴ When these facilities have been turned around for improved productivity, the plastic industry will produce at least 200,000 new jobs across Europe. This will be gained from the sorting and recycling facilities.⁵⁵ Such envisioned turnaround, and upgrading as the case may be will require heavy human and material investment. The envisioned goals of the EU towards the recycling industry may be summarised in terms of better financing and consumer awareness programmes.⁵⁶ Therefore, '...to boost the recycling industry, the EU will ... provide 100 million (pounds) in financing the development of smarter plastic materials and will lead campaign to raise awareness among consumers and stimulate change in habits.'⁵⁷

It is not just enough to pump capital into the existing configuration. There must be mutual and shared commitment to the underlying vision. They agree that; 'Rethinking and improving the functioning of a complex value chain requires efforts and greater cooperation by all key players, from plastic producers to recyclers, retailers and consumers. It also calls for innovation and a shared vision to drive investment in the right direction.'⁵⁸ The European Commission Strategy started from December 2015 when the European Commission adopted an 'EU Action Plan for a circular economy. In 2017 the Commission confirmed it would focus on plastic production and use as well as work towards the goal of ensuring that all plastic packaging is recyclable by 2030.'⁵⁹ For the above goals to be attainable, it will need the cooperation of all sectors of the economy such as the 'private sector, together with national and regional authorities, cities and citizens.' The drive will also be extended outside Europe. The Commissions strategies will aim to:⁶⁰

- i. Increase the value of 'between EUR 70 and 105 billion lost to the economy after a very short first use cycle';
- ii. increase trade market for recycled plastics by leveraging in better commodity prices and prospects for best profitability;
- iii. reduce the amount of plastics that end up in the oceans yearly. It is estimated that plastics account for over 80% of marine litter.⁶¹

Corporate actions against plastic waste

Food chains: The food industry is known for a staggering amount of waste. It is estimated that restaurants alone generate about 571,000 tons of waste annually. To reduce such overwhelming statistics, restaurants are looking at new ways of reducing the waste level. While most restaurant owners agree that 'zero waste' would be ideal, they are realistic enough to use such ideals as a pointer to what is achievable.⁶² Measures put in place at restaurants like the Silo owned by Chef Douglas McMaster in Brighton, England generally to reduce waste include milling flour on site to reduce waste associated with transportation and getting supplies from local growers. Specifically, to reduce plastic waste, plates consist of recycling plastics bags and straws are not in use.⁶³ The Silo has an industrial composter on its grounds to take care of whatever waste is left over. Ryan Chetiyawardana of the Cub restaurant has another approach. Rather than resort to a composter, he works in 'reducing what we have coming in...so there

⁵² ibid

⁵³ ibid

⁵⁴ Climate Action (in partnership with UN Environment) , 'The European Union releases decisive strategy against plastic waste' www.climateactionprogramme.org/new2/the accessed 27 May, 2018

⁵⁵ ibid

⁵⁶ ibid

⁵⁷ ibid

⁵⁸ European Commission (n 10)

⁵⁹ ibid, citing Commission Work Programme 2018 – COM (2017) 650.

⁶⁰ ibid

⁶¹ Jambeck et al, 'Plastic waste input from land into the oceans' 2015 *Science*

⁶² M Singh 'Warriors against waste: these restaurants and bars are aiming for zero' www.npr.org/sections accessed on 20 April 2018

⁶³ ibid

is nothing left over.⁶⁴ Within Indonesia, the nation encourages investment in plastic alternatives such as those made from 'bio gradable materials like seaweed, cassava and tapioca.' Also edible wrappers made from sea weeds are used to package soups, biscuits and waffles.⁶⁵

What can the individual do?

Earth day is a global event which is celebrated on the 22nd of April every year. It gives people an opportunity to plant trees and clean up their environment. Governments and also corporations are sensitised to be mindful of the environment by putting in place legislations at the local government levels to tackle pollution as well as to give back to it through social responsibility measures that will protect biodiversity. They are also encouraged to ensure proper clean up after partaking in activities that degrade the earth.⁶⁶ This year's Earth day which fell on the 22nd of April 2018 is no different. The organisers of the Earth Day Network (EDN) have chosen as their theme; 'End Plastic Pollution' This year's theme focuses on some key areas such as the need to regulate use of plastics to decrease pollution, and create awareness in individuals as to their responsibility for 'plastic pollution by choosing to reduce, refuse, reuse, recycle and remove plastic.'⁶⁷ It may be time for individuals to consider the manner in which plastics are used to avoid the pollution caused by unguarded disposal after use. The starting point will be the manner of collection. Instead of jumbling all plastics up at point of collection with other types of waste, it is better to sort them out. This would not only reduce the amount of contamination from other classes of waste products, but will also increase the price of such plastics on the market for other uses. However apathy and discouragement could arise on the part of people due to the amount of time needed for such sorting.⁶⁸ If the sorting is done at the recycling plants, this manner of processing often turns out to be quite expensive. However, the advantage of this is that there is no shortage to the uses to which such finely processed plastics can be put to. For example, alternatively:⁶⁹ 'Recycled plastic could be used to provide chemicals to the petrochemical sector, fuels to the transport and aviation sectors, food packaging and many other applications'. To encourage individual participation, plastics are exchanged for rice in Bitung city. Creation of public awareness means that more people understand that recycling probably does not take place as often as it should, and that most waste end up in oceans and landfills. The only way they can counter this trend is for plastics to be put to re-usable uses. It is also recommended that consumers can be persuaded to recycle more with the right incentives such as deposit return scheme, where consumers are rewarded for returning used plastics from such sources as bottled water, soft drinks and juices in an attempt to lower the plastic chaos.⁷⁰ But the challenge to collecting used plastics is that companies prefer to use primary raw materials, as prevalent lower oil prices means that it is cheaper to do so. And again, secondary sources in form of recycled plastics may not meet the high production quality without further processing.⁷¹

6. Conclusion and Recommendations

The corporate space remains the prevalent arena for plastic production. But with the ban by China on importation of waste products, Martin Bourque of the Ecology Center in Berkeley, CA is of the opinion that 'corporate recycling is in for a reality check as China raises its standards.' Martin believes the current trend to 'dump, burn, or bury recyclables that customers think are getting recycled may no longer be possible.'⁷² For too long, individual nations have not given much thought to waste management since China provided an easily available destination. Now individual nations engaged in manufacturing have to think in terms of using more recycled products, as well as solve recycling problems.⁷³ The goal of the EU which is engrained in their action plan is to attain a more circular economy by making plastics valuable in all ramifications. This will be achieved by 'addressing the challenges

⁶⁴ *ibid*

⁶⁵ Yuniar (n 12)

⁶⁶ EDN, www.earthday.org accessed 23 April, 2018 'What is earth day and what is it meant to achieve?' Being a message from the earth president Kathleen Rogers of the Earth Day Network (EDN)

⁶⁷ *ibid*

⁶⁸ Cole (n 28)

⁶⁹ *ibid*

⁷⁰ Laville (n 39)

⁷¹ Landbell Group (n 41)

⁷² Arkin (n 29)

⁷³ Cole (n 28)

posed by plastics throughout the value chain, and taking into account, their entire life cycle.⁷⁴ One of the immediate areas to be addressed is to reduce the perception that recycled plastic is of low quality and may not meet quality specifications. The low demand for recycled plastic is being addressed by the Commission by working with the European Commission for Standards to support improved market practices. This will involve integration with plastic producers in the chemical sector. Such an alliance goes back to production to ensure that better designed products come into the market.⁷⁵ There is no doubt that plastic waste value chains are increasingly cross-border. Though it comes with attendant opportunities,⁷⁶ the result has been a backlog of waste with often no immediate outlet. In order to tackle the massive build ups, recycling plants are considering other destinations to absorb the exports such as Vietnam and Malaysia. This will reduce the portion of the waste that ends up in incineration or use of landfills. Individuals are encouraged to engage in plastic sorting. The easy way to do this would be to keep a separate trash bag at home for plastic disposal. All members of the family will throw plastic waste directly into it. Young children can even make a game of it by counting plastics for learning, before they are finally thrown away.

The European Commission vision on the future of plastics sums up the focus of this essay:⁷⁷ 'A smart, innovative and sustainable plastic industry where design and production fully respect the needs of reuse, repair, and recycling, brings growth and jobs to Europe and helps cut EU's greenhouse gas emissions and dependence on imported fossil fuel'. To achieve this, design improvements remain crucial to reduce the 'cost of recycling of plastic packaging waste.'⁷⁸ Attention also has to be paid to the informal sector which consists of waste pickers – their activities could be upgraded by giving them better equipment and better rates for their labour. These waste pickers could work directly with corporate collection points or individuals and families to pick up the plastics at some designated points and sort them out. If this collaboration is properly carried out, it is only those plastics that are not needed and are bio-gradable that will finally end up in the landfills.⁷⁹ The waste picking and sorting procedures are only short term measures that have minimal impact. In the end, for more credible results, the industry needs to rethink its relationship with plastics. In the US alone, 'the petrochemical industry has invested \$164 billion in infrastructure expansion to make more plastics.'⁸⁰ Since the plastic industry will almost quadruple by 2050, recycling may not make enough input. Currently, recycling only absorbs about 9 percent of plastics produced since 1950.

Therefore, the solution may be to make fewer plastics. The Global Alliance for Incinerator Alternatives (GAIA) makes a case that there is an urgent need to present a new scenario for the future that frontally confronts the plastic epidemic, rather than the easy option of dumping them in other nations.⁸¹ GAIA also maintains that corporations that dole out billions of single-use packaging must be made to clean up their mess. Such corporate audit insight also reveals that with the recent Chinese ban on import of waste, the most logical step would be to reduce production of plastics. This option is to be considered despite the fact that it is more than ever cheaper to produce plastics because of cheap fossil extraction like shale gas. But the industry must realise that clean-up of the environment degraded by plastics is not so cheap.⁸² There is also the need to standardise plastics such that all plastics have the same quality content. This is because producer nations find it easier to recycle high quality plastics and send the low grade ones to Asia and other destinations. If good standards are maintained, then the producer states will be more inclined to recycle them, thereby reducing pollution in the export destinations. 'Low virgin plastic prices out compete recycled plastics'. So over production of virgin plastics leads to low market prices for recycled plastics. The idea then is to reduce production of virgin plastics to give leverage to recycled products to thrive – on the long run; this will dramatically cut down the urge to make more virgin plastics.⁸³

⁷⁴ Europarc Federation (n 48)

⁷⁵ *ibid*

⁷⁶ European Commission (n 10)

⁷⁷ *ibid*

⁷⁸ *ibid*, citing the Ellen MacArthur Foundation, 'The new plastic economy: Catalysing action' January, 2017

⁷⁹ Arkin (n 29)

⁸⁰ *ibid*

⁸¹ GAIA /Zero Waste Europe, "Recycling is not enough" www.no-burn.org/wp-content/uploads/Recycling accessed 31 May 2018

⁸² *ibid*

⁸³ *ibid*