

THE IMPORTANCE OF RESPONSIBLE PRODUCTION AND CONSUMPTION TO OVERCOME THE PLASTIC PARADOX

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Abstract

Purpose – to reveal the importance of responsible production and consumption to overcome the plastic paradox.

Design/methodology/approach – analysis and synthesis of scientific literature, comparative analysis of good practices in different countries.

Findings – The business and society should take care not only for “today” but for “tomorrow” too. As a result, both business and society need to be encouraged or even forced to behave socially responsible more actively to contribute to overcoming plastic paradox in the world. The aspiration of socially responsible production and consumption is still increasing in Lithuania.

Practical implications – it is necessary to learn the good practices of other countries in order to encourage the business and society to behave socially responsible in the processes of production and consumption and in this way to contribute to the overcoming the plastic paradox in the world.

Originality/Value – the importance of responsible production and consumption is disclosed. Only actively acting responsible business and society can contribute to overcome the plastic paradox.

Keywords: responsible production and consumption, business, society, plastic paradox.

Research type: case study.

Introduction

Plastic has become a part of our lives. The usage volumes while at the same time and waste volumes of plastics are growing significantly. It is ironic, but the plastic (polyethylene) bags were invented just little more than fifty years ago and started to be used instead of paper bags as an effective mean to save trees. The plastic bags are significantly less expensive than paper bags, are stronger, and since they require less energy and use less resources for manufacture, actually have a smaller carbon footprint than paper. Unfortunately, after plastic bags replaced paper ones, the scientists faced the another problem: the world’s landfills were clogged by plastic products, but the worst fact is that no one can say for sure that is their real disintegration time. Traditionally, it is speculated that plastic bags are often used only for short, however they last in the environment for hundreds or even thousands of years, but researchers suppose that it is more presumption and the way of saying that

this process takes a “very very long” (over the 500-1000 years). Since the plastic bags were invented quite not long ago, there is no practical possibility to check how long actually takes the degradation process.

This situation could be called as the plastic paradox.

The business and society cannot behave apathetic anymore! So the goal of this article is to reveal the importance of responsible production and consumption to overcome the plastic paradox. It should be emphasized, that the impact of plastic production process on the environment, which is self-evident, in this article will not be deeply discussed.

Plastic Paradox? Only a Fiction or Already a Result?

Plastic bags have butchered their way into pop culture as a symbol of carelessness, frivolity and consumerism (Gamba, 2012). Society meet plastic every day:

- While shopping (shopping bags, which allow customers to transport their goods from the stores to their home; small disposable (sometimes are called “single-use” ones as they are used only once; mostly are given free of charge) plastic bags are used to put-in not only non-packaged fresh food products (vegetables, fruits, berries, fish, meat and their products, bakery products, pastries and etc.) or hot-food-to-go, for reasons of food safety and hygiene, but and other goods, like clothes or other small objects) (Lyons, 2013; Temsamani, 2014);

- At home and work (furniture, tools and instruments from plastic become dominant);

- Travelling (packing clothes or footwear into plastic bags);

- Picnicking (using plastic boxes and (disposable) dishes; revellers do not usually clean up the environment after picnics and others are assumed to find a mess) and etc.

The plastic bags do not take place and are light but highly functional (they are able to bear thousand times their own mass), hygienic and waterproof, protect products from damage and their use had grown over the years (PlasticsEurope, 2014/02).

As new uses for plastic was developed, the quantity and variety of plastic items found in the environment all around the world has increased dramatically: plastic bags are swirling around on streets, hanging from trees in parks and forests, floating in rivers, seas and oceans (can endanger the marine wildlife, which might eat them or become entangled in them) (Gamba, 2012; UNEP, 2014). The another one serious aspect of plastics is their persistency in the environment: when plastics fragment, they do not completely biodegrade; instead of this it splits up into smaller and smaller pieces that might have long-term effects on water and soil quality (Gamba, 2012).

Disposable plastic bags are widespread, often free of charge as they are inexpensive for retailers (Lyons, 2013). Plastic bags are hard to recycle (because of rapid contamination) and only a small part is recovered (as not all countries have waste incineration plants). Even when they are kept for reuse (e.g. for new purchases; for storage purposes; as liners for trash bins; or to clean after the family dog), they are usually accumulated (virtually any household has a bulging “bag of bags”) much faster than they are reutilised (Gamba, 2012; Temsamani, 2014). In general, plastic is served for a very specific purpose, while also provides many practical advantages.

But mostly plastic bags are not reused! As a result, plastic paradox has become a major environmental and social problems caused by previous and today societies for today and future. This could be explained according different reasons (look Table 1).

Table 1. Causes of the plastic bags usage

Causes	Explanation
Changing consumer behaviour	Trends towards eating at education or work places or, eating away from the home and greater use of public spaces increase the demand for light weight, low (or zero) cost and convenient plastic carrier bags.
Low consumer awareness	Low consumer awareness of the problem of litter and the overall environmental benefits of reusing plastic bags and switching to multiple-use plastic or cloth carrier bags is still low (especially in Member States that do not yet have strong policies in this area).
Established retail practices	Retailers are not encouraged (by policy in this area) to limit the use of disposable plastic bags because they are quite inexpensive and provide a service to their customers (according to some, unilaterally reducing such a service might have a negative impact on their sales).
Low prices and non-internalisation of external costs	The use of plastic carrier bags also provokes negative environmental consequences that are not included in the prices paid by retailers and consumers.
Low level of plastic recycling	Even though plastic bags are recyclable, the thinness and light weight of them mean they do not have a high recycling value. Collection and transportation is not very profitable even if the bags are compacted and washing them requires large volumes of water.

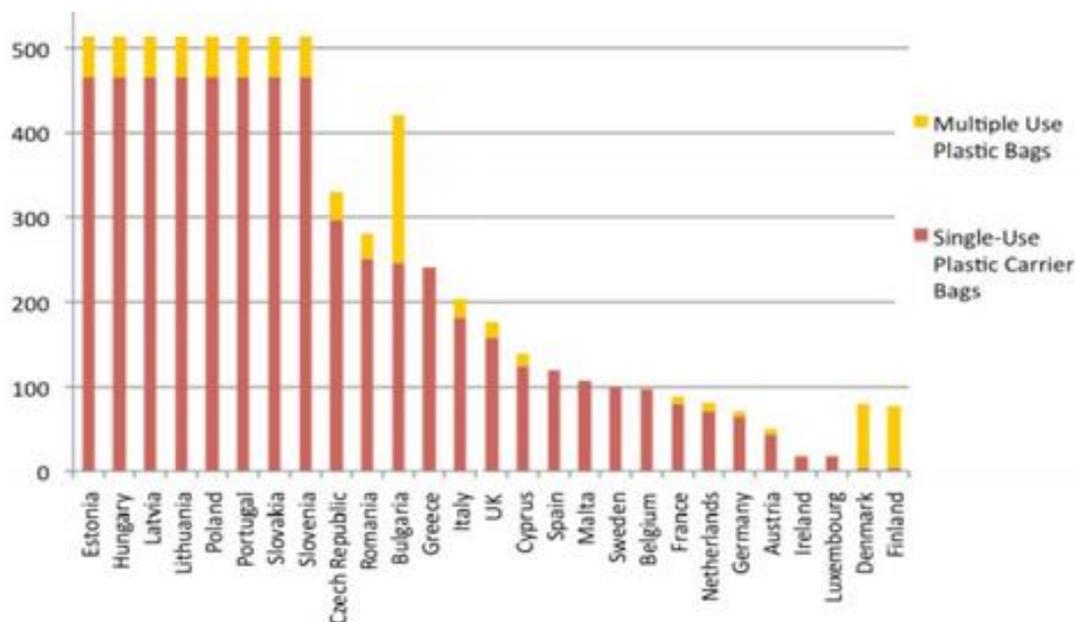
Source: prepared according to Lyons, 2013

“Society as a whole – and the economic sectors in particular – are well aware of the problem and are looking for ways to address and help solve it” (PlasticsEurope, 2014/02).

Globally are produced about 280 million tonnes of different plastics each year and only a very small part is recycled (UNEP, 2014). The European plastics industry of about 62 thousand companies employs more than 1.45 million people in the European Union (by the number of plastics industry companies dominate France, UK, Poland, Romania and Hungary (the last one is known for the largest number of employees in the plastics industry)) and creates a turnover in excess of 350 billion EUR per year. It is discussed, that regulation in Europe is becoming critical for plastics industry to create high-quality employment opportunities, drive economic growth and optimise their contribution to European welfare (PlasticsEurope, 2014; PlasticsEurope, 2015).

It is estimated, that worldwide nearly two million single-use plastic bags are used each minute and it is about one trillion each year (Larsen and Venkova, 2014; PlasticsEurope, 2015). Around 90 billion single-use plastic bags were used in the EU in 2010

More than 90 billion plastic carrier bags were placed on the EU market in 2010 (European Commission, 2015/0123 final) and the amounts are quite stable. Every European citizen use an average of 200 plastic bags per year, of which 90% are single-use lightweight bags (it means that they are used only once) (Environment News Service, 2014) (see Figure 1).



Source: European Commission, 2013/0444 final; Temsamani, 2014

Figure 1. Plastic bags used per person in EU Member States¹

For sure, the consumption of single-use plastic bags contrasts widely among different countries: it ranges from just four a year for people in Denmark (as has introduced a charge in 1993 and consumers commonly pay 0.21–0.37 euro per bag) and Finland (despite the fact, that country have no national legislation on the matter, just voluntary activities of retailers work fluently there) and to over 400 a year for most East Europeans (Barbière, 2015; BBC News, 2014; Larsen and Venkova, 2014; Environment News Service, 2014). The worst performing (the consumption as well as the littering rates of plastic bags per capita is still considered high) countries are Portugal, Slovenia, Slovakia, Hungary, Poland, and the Baltic states: Estonia, Latvia and Lithuania (Kasidoni et al, 2013; Larsen and Venkova, 2014; Environment News Service, 2014). More than eight billion plastic bags end up as litter in Europe every year (Environment News Service, 2014).

The goal to overcome the plastic paradox and minimise its negative impact on the environment and society could be achieved by strengthening the responsible production and consumption.

¹ 2010 or latest available data. Croatia was not included.

Responsible Production and Consumption. Plastic Bag Regulations Worldwide and Guidelines by EU

One of the opportunities to avoid and resolve the damage caused by plastic bags, and the costs of undoing the harm (which is mostly impossible), and to promote reusable bags instead of throwing them away would be to educate the society (Lenguyen, 2011; Lyons, 2013). So, the retailers need to encourage customers more actively to reuse their plastic bags (if they decide to buy them) as more times as it is possible and only then to recycle and do it correctly.

Consumers become more and more responsible to make their environment safer and healthier to live in. As a result, they become more conscious about their purchasing in respect with all the products that they use in their daily life. That is why consumers prefer the products which are not harmful and eco-friendly for their-self and environment (Chaudhary et al, 2011). The minimisation of plastic bag use contributes to realization of this ideology.

As it was already mentioned, the consumers can reuse plastic bags. Another is that they could switch to alternative types of reusable bags (include biodegradable plastic bag, qualified cotton bags and etc.), or to cardboard boxes (preferably of recyclable paper) (Sherrington et al, 2012; Lyons, 2013; Xing, 2009). Nevertheless, switching back to paper or using biodegradable or compostable plastic bags does not guarantee clearly to be the solution in all situations. The best determination depends on life-cycle assessments, and local behaviour and waste management facilities (Lyons, 2013).

Some manufacturers incorporate the specific additives into conventional plastics as these additives force plastic fragment over time into small fractions. Such plastic is marked as “oxo-biodegradable” or “oxo-degradable”. Unfortunately, this note can be misleading as such “specific” bags may not be a solution to littering and on the contrary may increase pollution. The European Commission should examine such “oxo” plastics and present a report including a set of measures to limit their consumption or to reduce any harmful impacts of the use on the environment and society (Directive (EU) 2015/720).

The totally biodegradable plastic bags are less competitive than the partially biodegradable or non-biodegradable ones for their green and high-tech, high production cost and small scale. Despite this fact, more qualified substitutes must be designed and popularized as soon as possible, as to plastic bags which don't meet particular standards, especially the single-use plastic bags, supervisions and even punishment must be strengthened until the product is standardized. To add, the national authorities should prepare the relevant policy to encourage and stimulate the research and produce of the totally biodegradable plastic bag as more as possible and in time to replace the usual plastic bags fully (Xing, 2009).

There are some countries where food products are already packaged in a way that does not require additional thin plastic disposable bags, e.g. fruits and vegetables are packed in mesh bags. But it should be emphasised that thus limits the customer freedom of choice, is uncomfortable as in that packaging could be added too much as is demanded by consumer or it may contain any damaged products inside. In this situation the packaging is destroyed and thrown out and the new one is used to pack

the products. Moreover, the customers would like to keep the opportunity to choose the products which they want and how much they need their own.

Generally, plastic bags help to prevent waste of food, since it allows customers to buy the amount they demand rather than fixed packaged quantities. Because of the specific characteristics and benefits (e.g. visual control at checkout, food protection) of plastic bags there is very few alternatives to their use (Temsamani, 2014).

It is considered, that there is a causal link between usage and waste of plastic bags and that a reduction in usage will automatically reduce the waste too. The plastic bags are not a problem anymore, since they are successfully being used as a resource for energy production, in line with the waste hierarchy (remove/eliminate, reduce, resource (change materials or sources), reuse, recycle/compost, recover/energy-from-waste (heating and electricity), dispose/landfill) in Member States where EU legislation is already implemented and enforced. The countries should try to achieve zero land-filling of plastic carrier bags (PlasticsEurope, 2014/02).

It is a pity, that most often plastic bags are still excluded from recycling schemes (Lyons, 2013). However, there are some (78) countries around the world which have initiatives to reduce usage of plastic bags (see Figure 2) and examples in European Union Member States are discussed in the following section.



Source: Earth Policy Institute, 2016

Figure 2. Plastic Bag Regulations Worldwide

Many possible policy approaches to minimise the usage and waste of plastic bags are available: from soft policies like encouraging voluntary initiatives from retailers, to more strict regulations starting with charges on plastic bags and finishing with a complete bans of single-use bags (Gamba, 2012).

Until 2013, European Union Member States and separate companies had taken various measures (e.g. retailers’ voluntarily decisions not to serve plastic bags for free-of-charge; different anti-littering campaigns; charges for and even bans of specific plastic bags) to minimise the usage of plastic bags. A plenty of possible options were

presented; the question was remained: which ones would have the most effect to reduce plastic waste? (PlasticsEurope, 2014/02).

The preference will depend on the specific circumstances: access to alternatives; current recycling practices and waste management; social norms and attitude towards the environment; supporters and opponents of the initiative and their relative influence, and many others (Gamba, 2012).

Although the European Union countries were and are still trying to minimise the usage of plastic bags on their own, plastic waste is still problematic enough, that the European Commission (EC) decided to strive imposing a Europe-wide law (Larsen and Venkova, 2014). As a result, the draft rules amending the EC’s Packaging and Packaging Waste Directive (PPWD) were approved by the European Parliament in April 2014 (the latest revision of the PPWD occurred on 29 April 2015 with the adoption of Directive (EU) 2015/720) and there were aimed to decrease plastic bag use in the EU by 50% by 2017 and by 80% by 2019 comparing the EU average in 2010 (Chatain, 2014; European Commission, 2016; Larsen and Venkova, 2014).

It should be emphasized that only Croatia voted against a proposal to reduce the use of plastic carrier bags (as around 60 companies employing a total of around 1,500 people in this country were aimed to protect jobs), but the Council of the European Union has adopted a Commission proposal for a directive to reduce the usage of plastic carrier bags (CroatiaWeek, 2014).

While an 80% reduction may seem quite easy to achieve for some countries, but at the same time for others this means a reduction of over 90%. Due to this huge disparity (from 4 to 400 per person a year) among the Member States, there is no “one size fits all” solution. This goal can be tackled through national measures, including national reduction targets in one hand and an EU-wide awareness-raising campaign on the value of carrier bags and the need to reuse them in order to save resources on the other hand. Of course, one could argue that the funds should be used to finance the collection and recovery at their end-of-life (PlasticsEurope, 2014/02).

The PPWD agreement is obligatory in all EU countries and gives national authorities of Member States two ways to implement it. The measures shall include either or both of the following (European Parliament, 2014; EUROPEN, 2014; EU: Committee on the Environment, Public Health and Food Safety, 2014):

(a) the adoption of measures ensuring that the annual consumption level does not exceed 90 lightweight plastic carrier bags per person by the end of 2019 and 40 lightweight plastic carrier bags per person by the end of 2025, or equivalent targets set in weight (compared with an average of 176 bags per person in 2010). Very lightweight plastic carrier bags may be excluded from national consumption objectives;

(b) the adoption of instruments introducing a charge on single-use lightweight plastic carrier bags by the end of 2018, unless equally effective instruments are implemented. Very lightweight plastic carrier bags may be excluded from those measures (Directive (EU) 2015/720).

Even Committee on the Environment, Public Health and Food Safety of EU (2014) in their report had stated, that “making consumers pay for plastic bags can reduce consumption dramatically almost overnight”. However, it should not be applied to bags which are necessary for food hygiene. Member States which have established a

separate bio-waste collection system should be allowed to reduce the price for the bio-based and compostable lightweight carrier bags.

As a result, a proper implementation of EU waste legislation should remain a priority, especially in those countries which are “leading” in plastic use and waste (PlasticsEurope, 2014/02).

It should be noted, that choosing the optimal measures requires careful consideration in order to achieve a positive outcome. It is expected that a successful initiative might create momentum for other environmentally-friendly initiatives by effectively reducing the stream of plastic waste. However, a wrong campaign (badly organized, lacking participation or information, ill-suited to circumstances, etc.) could not only be rejected by society but also fail its specific targets (Gamba, 2012).

It is encouraging that in countries and regions that have introduced strong policies to reduce single-use plastic carrier bag use, such initiatives have proved popular (Lyons, 2013). Some countries ban, or charge for plastic and paper bags at the grocer rather than encouraging recycling.

Not less important is to raise awareness amongst society on the impact of littering behaviour and encourage socially responsible behaviour (PlasticsEurope, 2014/02).

It should be recognized that volunteer initiatives seem to address the issue of plastic bags effectively in certain European Union Member States. More specifically, Austria, Germany, Finland and France have reached lower consumption of single-use plastic bags and at the same time lower littering rates of single-use bags than other EU MS with no volunteer initiatives. On the other hand, there are MS where some voluntary initiatives have taken place but were rather isolated (Kasidoni et al, 2013).

The good practices of these and other countries are examined in the next section of this article.

Charges for or Ban on the Plastic Bags? Practices of European Union Member States

It is not a secret that most plastic carrier bags minimisation strategies have necessity and merit, but it should be recognized that some are more effective than others. Business and society prefer and accept more easily voluntary initiatives, but this takes more time to get the results and the effectiveness depends on the number of retail establishments participating. At the beginning such initiatives as charges or even bans cause some inconvenience for consumers but they give the fastest results (Lyons, 2013).

Realising the socio-environmental problem associated with plastic bags, many countries around the world have already tried to free the societies from their addictions by implementing different initiatives. Below are given practices of EU Member States in reducing the use of plastic bags.

Charges for some plastic bags are applied in Denmark (since 1993); Ireland (since 1994, since 2002 bag levy introduced to both biodegradable and non-biodegradable bags), Malta (started in 2005 and again in 2009), Belgium (federal environmental tax on single-use plastic carrier bags since 2007), Latvia (since 2008), Romania (since 2009), Bulgaria (since 2011), Czech Republic (since 2011), United Kingdom (in Wales - compulsory since 2011 and entered into force in 2013; in England introduced in 2015)

and France (since 2014). Most often the plastic bag tax is set for bag manufacturers and is based on the bag’s weight. Manufacturers pass the cost to retailers; the stores are allowed to relinquish and transfer the cost to consumers in bag charges. The charges have the effect on drop in plastic bag use and increased use of reusable bags (European Commission, 2013/0444 final; Earth Policy Institute, 2016; European Environment Agency, 2014; Erbach, 2014; Larsen and Venkova, 2014).

The tax (earmarked to cover administration costs and for an environmental fund used to support waste management, litter cleanup and other environmental initiatives) was so successful in reducing the use of plastic carrier bags in Ireland that annual revenues from the tax were only around one tenth of the amount initially expected. Administration costs were very low, at about 3% of revenues, because reporting and collection are integrated into the existing VAT system (Erbach, 2014).

Additionally in Belgium works voluntary agreement, plastics collection and recycling organisations collect fees charged to end-users. However there is no national scheme for recycling plastic bags separately (European Commission, 2013/0444 final).

Some supermarkets (mostly food stores) have voluntarily chosen to charge for plastic bags - mostly around 0.10 euro per bag - in Sweden (tax is 0.17 - 0.30 euro, by the way, the plastic bag was invented in Sweden), Germany, Finland, Hungary, Slovakia, Estonia, Spain, Portugal, France and the Netherlands (European Commission, 2013/0444 final; Erbach, 2014; Earth Policy Institute, 2016). To add, in the Netherlands in many shops there are “bag bins” where used-bags can be deposited and used again by other customers. In addition, bag manufacturers are responsible for arranging the recovery or recycling of their product. If recycling or material recovery targets are missed, producers must pay a tax based on the shortfall amount (European Commission, 2013/0444 final).

In Germany a system called Packaging Ordinance was introduced in 1991, which stated that packaging manufacturers and distributors are financially responsible for the packaging waste they created (it was set on the amount of packaging waste that manufacturers and distributors had to take back and recover, and these requirements increased gradually). This led to the fact, that in 1993 was created the Dual System Deutschland (DSD), an organisation that collects and manages packaging waste according to the requirements on behalf of fillers and retailers (is well known as the "Green Dot" system (named for the symbol found on recyclable packaging)). Companies pay a fee to the DSD which reflects the collection and recovery costs of the individual materials thus providing them with an incentive to reduce or minimise the packaging materials used. Moreover, all stores that provide plastic bags must pay a recycling tax. Most supermarkets voluntarily charge 5–10 euro cents per bag. Commendable the fact that, almost all plastic bags consumed in the country are recycled, almost three quarters of consumers use carrier bags multiple times, and only about a tenth of groceries are taken home in a new plastic bag (Erbach, 2014; Kasidoni et al, 2013; Larsen and Venkova, 2014).

Some Austrian supermarkets have stopped offering single-use plastic bags, and others provide plastic bags containing more than 80% recycling material. From 2018, the use of plastic carrier bags would be stopped completely in Spain, except for plastic bags for meat, fish and freezer products (with a high water content) (European Commission, 2013/0444 final; Earth Policy Institute, 2016).

In Croatia are applied the combination of a tax (since 2009) on plastic bag producers, a voluntary fee charged by retailers, and a voluntary bag reduction initiative by the retail sector (Earth Policy Institute, 2016).

No measures are applied in Cyprus and proposals to make all bags biodegradable and to require supermarkets charging customers for plastic carrier bags failed in 2008. In Slovenia proposals are being considered for a tax of 0.50 euro for plastic bags and 0.40 euro for biodegradable bags (it should be noted that the price difference is relatively small, but it aims to reduce the consumption of plastic bags in general) (European Commission, 2013/0444 final; Earth Policy Institute, 2016).

Since 1988 in Italy was applied a law taxing importers and producers of non-biodegradable bags, but it did not last or appear effective. In 2007 began a national pilot program aiming to reduce gradually the consumption of non-biodegradable shopping bags and in 2011 there were banned the distribution of plastic bags that are not from biodegradable sources. Unfortunately, the ban has not been fully carried out or enforced because of unresolved legal disputes over EU trade laws (Nastu, 2011).

The national ban on single-use plastic bags are set in France from the beginning of this year. Moreover, the ban on plastic carrier bags will come into effect in two stages: on July 1, 2016 for “lightweight” shopping bags (only bags thicker than 50 microns will still be allowed on the basis they are reusable) and from the beginning of 2017 are planned to ban the packaging bags for fruit and vegetables (The Local, 2015; EuroNews, 2016; Barbière, 2015).

By European Commission (2013/0444 final) is stated that no specific legislation are applied in Luxembourg, Greece and Poland. But in Luxembourg reusable long-life bags were introduced on a voluntary basis since 2004 and in Greece some supermarkets have made reusable shopping bags available but with limited success because thin plastic carrier bags are still distributed without charge since 2008. In Poland the tax was considered but eventually dropped in 2010 (Erbach, 2014; Pilarczyk and Grzesiuk, 2012).

In 2013, European Commission in their report stated that “in Lithuania, there is no legislation or planned legislation to ban plastic carrier bags” and added that “most distributors voluntarily do not use plastic carrier bags” (European Commission, 2013/0444 final). Lithuania started actively working on the implementation of the Directive (EU) 2015/720 in the beginning of 2016. It is planned to ban the single use plastic bags since 2019 (Seimas of the Republic of Lithuania, 2016).

Expecting to reach the bigger reductions in the number of plastic carrier bags use and waste, the charges for plastic bags should be passed on to the consumers in full. The price should be high enough (even a low price can have a big impact if customers see a payment as a hassle or if use of plastic carrier bags becomes socially undesirable) to cover the environmental and social costs generated over the life cycle of a plastic carrier bag (including producing, using, collecting and waste management). It is important to set an appropriate level of price: to start with adequate price and over time it needs to be increased little by little to avoid re-growth of plastic bag use. To sum up, the primary goal is to reduce the consumption of single-use plastic carrier bags by influencing consumer behaviour, rather than to raise revenue. Revenues could be used to enhance the environmental benefit, for waste collecting and recycling and other environmental projects (Lyons, 2013).

To sum up, the oldest (passed in 1993) existing plastic bag tax is in Denmark. Charging consumers for plastic bags appears to be effective in most countries. As well, many societies were and are seeking ways and means to minimise the plastic use and waste hoping to compete the Irish success. Germany was the first country (in 1991) which had introduced a system, which stated that manufacturers (fillers) and distributors (retailers) are financially responsible for the packaging waste they created. Moreover, other countries could learn from the Netherlands and suggest more alternatives of voluntary indicatives. Maximum efforts should be taken by Lithuania, as the set deadline is close.

The good practices of examined countries prove that applied charges demonstrably encourage more and more people to reuse single-use plastic carrier bags or use alternative kind (multiple-use) carrier bags made of plastic or other materials (e.g. linen, cotton, polyester and etc.) more actively and in this way to minimise littering. In the nearest future the free-of-charge plastic bags to customers should not be provided in EU and it is likely that most Member States will be able to take measures to reduce plastic bag use 80% by 2019 .

Socially responsible business (producers, retailers) should voluntary participate in the voluntary activities to reduce the plastic bags use and waste. Socially responsible customers already carries their old plastic or cloth shopping bags . Hopefully, this will be not only the fashion but a lifestyle too in the nearest future.

Conclusions

The business and society should take care not only for “today” but for “tomorrow” too. As a result, it is necessary to learn the good practices of other countries in order to encourage or even force both business and society to behave socially responsible in the processes of production and consumption more actively to contribute to overcoming plastic paradox in the world.

Charges for the plastic bags demonstrably encourage society to reuse plastic carrier bags or use alternative kind multiple-use carrier bags more actively. For sure, at the beginning charges cause some inconvenience for consumers but they give the fastest results. Voluntary initiatives to minimise the usage and waste of plastics are not less important, despite the fact that these take more time to get the positive results. The bans on non-degradable plastic carrier bags must be applied in all the countries.

References

- Barbière, C. (2015). *EU to halve plastic bag use by 2019*. Retrieved from <http://www.euractiv.com/section/sustainable-dev/news/eu-to-halve-plastic-bag-use-by-2019/>
- BBC News. (2014). *Minimum charge for carrier bags in Scotland introduced*. Retrieved from <http://www.bbc.com/news/uk-scotland-29677458>
- CHATAIN, B. (2014). *MEPs clamp down on wasteful use of plastic carrier bags*. *European Parliament News*. Retrieved from <http://www.europarl.europa.eu/news/en/news-room/20140411IPR43461/MEPs-clamp-down-on-wasteful-use-of-plastic-carrier-bags>
- Chaudhary, B.; Tripathi, S.; Monga, N. (2011). Green marketing and CSR. *International Journal of Research in Finance and Marketing*, 1(6).

CroatiaWeek. (2014). *Croatia Only EU Member Against Plastic Bag Reduction*. Retrieved from <http://www.croatiaweek.com/croatia-only-eu-member-against-plastic-bag-reduction/>

Directive (EU) 2015/720 of the European Parliament and of the Council of 29 April 2015 amending Directive 94/62/EC as regards reducing the consumption of lightweight plastic carrier bags. Official Journal of the European Union, L 115, 6 May 2015. Retrieved from <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2015:115:FULL&from=EN>

Earth Policy Institute. (2016). *Plastic Bag Regulations Worldwide*. Retrieved from <https://www.google.com/maps/d/u/0/viewer?mid=1EtryW26jj76KN7b6oTBCsVPkFw>

Environment News Service. (2014). *European Parliament Takes Aim at Plastic Bags*. Retrieved from <http://ens-newswire.com/2014/03/11/european-parliament-takes-aim-at-plastic-bags/>

Erbach, G. (2014). *Reducing the use of lightweight plastic carrier bags*. Retrieved from [http://www.europarl.europa.eu/RegData/bibliotheque/briefing/2014/140800/LDM_BRI\(2014\)140800_RE_V1_EN.pdf](http://www.europarl.europa.eu/RegData/bibliotheque/briefing/2014/140800/LDM_BRI(2014)140800_RE_V1_EN.pdf)

EuroNews. (2016). *France bans plastic bags, what about the rest of the EU?* Retrieved from <http://www.euronews.com/2016/06/30/france-bans-plastic-bags-what-about-the-rest-of-the-eu>

European Commission. (2016). *Review of Waste Policy and Legislation*. Retrieved from http://ec.europa.eu/environment/waste/target_review.htm

European Commission. (2013/0444 final). *Commission staff working document: Impact Assessment for a Proposal for a Directive of the European Parliament and of the Council amending Directive 94/62/EC on packaging and packaging waste to reduce the consumption of lightweight plastic carrier bags*. Retrieved from <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013SC0444&from=EN>

European Commission. (2013/0123 final). *GREEN PAPER On a European Strategy on Plastic Waste in the Environment*. Retrieved from <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013DC0123&from=EN>

European Environment Agency. (2014). *2011 survey of resource efficiency policies in EEA member and cooperating countries - LATVIA*. Retrieved from <https://www.eea.europa.eu%2Fthemes%2Feconomy%2Fresource-efficiency%2Fcountry-fact-sheets-2011%2Flatvia-2014-resource-efficiency-policies&usq=AFQjCNHUJw4rVBfjHr5sK9aa0i02LAmfOA&sig2=A5nCy8QSZXv5blczf7JuOg>

European Parliament. (2014). *Reducing use of plastic bags: MEPs strike deal with Council Presidency*. Retrieved from <http://www.europarl.europa.eu/news/lt/news-room/20141121IPR79835/Reducing-use-of-plastic-bags-MEPs-strike-deal-with-Council-Presidency>

European Union: Committee on the Environment, Public Health and Food Safety. (2014). *Report on the proposal for a directive of the European Parliament and of the Council amending Directive 94/62/EC on packaging and packaging waste to reduce the consumption of lightweight plastic carrier bags (COM(2013)0761 – C7-0392/2013 – 2013/0371(COD))*. Retrieved from <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+REPORT+A7-2014-0174+0+DOC+XML+V0//EN>

EUROPEN. (2014). *Plastic carrier bags proposal adopted: marketing restrictions softened but still undermine Single Market for packaging*. Retrieved from <http://www.europen-packaging.eu/component/ccnewsletter/?view=detail&id=51&sbid=201&tmpl=newsletter>

Gamba, C. (2012). *Plastic Bags: A Sustainability Case Study*. Retrieved from <http://www.tesionline.com/intl/preview.jsp?pag=1&idt=44162>

Kasidoni, M.; Moustakas, K.; Malamis, D. (2013). *The use of plastic carrier bags in Europe: Existing situation and challenges*. Retrieved from http://athens2014.biowaste.gr/pdf/kasidoni_et_al2.pdf

KRISTOFFERSON, M. (2014).

Larsen, J., Venkova, S. (2014). *The Downfall of the Plastic Bag: A Global Picture*. Retrieved from http://www.earth-policy.org/plan_b_updates/2014/update123

Lenguyen, T. (2011). *The impact of corporate social responsibility programs on a company's image and reputation: A case study. Ho Chi-Minh: Mid-size Company*. Retrieved from <http://www.graduate.au.edu/gsbjournal/7V/Dec2011/Dung%20Le%20JOURNAL.pdf>

Lyons, L. (2013). *Case Study: Reducing plastic bag use in the UK and Ireland*. Retrieved from http://dynamix-project.eu/sites/default/files/Plastic%20bags_Ireland%20and%20UK.pdf

Nastu, P. (2011). *Italy Carries Out Plastic Bag Ban*. Retrieved from <http://www.environmentalleader.com/2011/01/06/italy-carries-out-plastic-bag-ban/>

Pilarczyk, B., and Grzesiuk, A. (2012). *Ecological aspects of marketing strategies in retailing. The experience of the Polish market*. Retrieved from <http://www.marketing-trends-congress.com/archives/2012/Materials/Papers/Communication/PilarczykGrzesiuk.pdf>

PlasticsEurope (2014). *The Plastics Industry: A strategic partner for economic recovery and sustainable growth in Europe. Manifesto on the competitiveness of the plastics industry*. Retrieved from http://www.plasticseurope.org/documents/document/20141105105129-plastics_industry_manifesto.pdf

PlasticsEurope (2014/02). *View Paper on the European Commission's proposal on lightweight plastic carrier bags COM(2013) 761 final*. Retrieved from http://www.plasticseurope.org/documents/document/20140305120153-plasticseurope_views_on_plastic_bags_feb_2014.pdf

PlasticsEurope (2015). *Plastics - the Facts 2015*. Retrieved from <http://www.plasticseurope.org/Document/plastics---the-facts-2015.aspx>

Seimas of the Republic of Lithuania. (2016). *Aplinkos apsaugos komitetas posėdyje svarstė Pakuočių ir pakuočių atliekų tvarkymo įstatymo projektą, kuris parengtas siekiant perkelti direktyvą (ES) 2015/720 dėl lengvųjų plastikinių pirkinių maišelių sunaudojimo mažinimo*. Retrieved from http://www.lrs.lt/sip/portal.show?p_r=25019&p_k=1&p_t=164064

Sherrington, CH. et al. (2012). *Assistance to the Commission to Complement an Assessment of the Socio-economic Costs and Benefits of Options to Reduce the Use of Single-use Plastic Carrier Bags in the EU. Final Report for the European Commission DG Environment under Framework Contract No ENV.C.2/FRA/2011/0020*. Retrieved from http://ec.europa.eu/environment/waste/packaging/pdf/study_options.pdf

Temsamani, M. (2014). *Lightweight plastic carrier bags: position paper on EP amendments to Directive 94/62/EC*. Retrieved from http://www.eurocommerce.eu/media/86311/EuroCommerce%20position_lightweight%20plastic%20carrier%20bags_.pdf

The Local. (2015). *France to ban plastic bags from March 2016*. Retrieved from <http://www.thelocal.fr/20151229/france-to-ban-plastic-bags-from-march-2016>

UNEP (2014). *Valuing Plastics: The Business Case for Measuring, Managing and Disclosing Plastic Use in the Consumer Goods Industry*. ISBN: 978-92-807-3400-3

Xing, X. (2009). Study on the ban on free plastic bags in China. *Journal of Sustainable Development*, 2(1), 156-158.