



Plastic Waste reduction by adapting procurement policy or project management process

Antónia Prata

Contents

Research purpose	3
Change Through the Supply Chain	3
Case study: package-free stores	3
Package free Zero : UK-Wide Stores	3
Poco Restaurant - Bristol, Uk	4
New patterns of procurement and consumption	5
Replacing single-use products with reusable ones	5
Plastic Reduction Policy	5
Alternatives to plastic and biodegradable plastics	5
References	5

Research purpose

Plastics are one of the most used materials in human activities, where consumer consumption and industrial production together has imposed a vast rise in demand for this material in the last century. While plastic is ideally derived from crude oil as a primary source from a manufacturers' perspective, varying crude oil prices are driving manufacturers to seek for alternative sources for plastics production. Waste plastic recovered from obsolete consumer products thus becomes an economic substitution for virgin plastics. The possibility of international waste plastic trading strengthens the potential of this market.

This study focuses on procurement policy or project management process which reduces plastic waste.

Change through the Supply Chain

Case study: package-free stores

Increasing consumer awareness of the environmental and social externalities of food supply chains in developed countries instigates the opening of grocery stores that renounce the use of disposable plastic packaging for their entire product range.

Findings suggest that these stores may induce more resource-efficient behaviour in suppliers and consumers due to the reduction of packaging and food waste. Social benefits range from the support of small, regional farmers, to higher transparency along the supply chain and better informed consumers.

Different criteria dominate the supplier selection on packaging, organic production, regional origin and fair-trade. Zero-packaging stores save disposable packaging at the consumer end, but three of the stores stated that due to their small purchasing power, they do not have an impact on packaging practices of the suppliers. They receive their products in big bundles and bags (e.g. 25 kg for rice or 1 kg for spices). The majority has a mixture of reusable and recyclable waste (cardboard, paper) and with some, a minimum amount of disposable plastic foil which is wrapped around the pallets due to transportation regulations, or plastic bags for products such as chocolate and nuts. Still, most package-free store owners claim that having a little disposable packaging waste from the suppliers does not balance out the immense disposable waste savings at the consumer end. Yet, one owner is adamant not to accept any products delivered in disposable packaging: "Every time they get the feeling that it [the negotiation] is getting strenuous or that the supplier does not want to change their logistics, they should leave. [...] And they [the suppliers] return on their own or they are just not the right supplier for you. I rather renounce a product, before it is getting strenuous"

Package free Zero : UK-Wide Stores

Lush is probably the most well-known, selling naked soaps, shampoos, conditioner, deodorant, moisturiser bars and bath bombs. Their plastic tubs and bottles are also made from recycled materials.

Zero Waste Shop, London: The objective of Zero Waste is to promote naturally sustainable practices in which all used materials are reused (also 100% biodegradable).

Bulk Market , Dalston,: nothing is pre-packed and the idea is to fill and refill exact amounts that consumers need. Shoppers can bring their own containers or bags, or if they are passing by and stop to shop.

Hetu, London: is vegan focussed, selling a range of organic dry goods, liquid refills and reusables there are containers available to buy, or compostable bags that can be used.

Plastic Free Pantry: London, – offering a wide selection of whole foods/staples in recyclable, reusable or home compostable packaging, including pasta, flours, herbs, spices, rice, nuts and seeds etc.

Unpackaged Mission is to reduce packaging waste by developing systems that enable businesses and individuals to reuse and refill; and campaign for policy change.

Zero Green, Bristol

Earth.Food.Love – a zero waste shop in Totnes, Devon.

Natural Weigh – zero waste shop in Wales

The Clean Kilo – zero waste shop in Birmingham

Zero Green – Bristol's first zero waste shop

SESI – zero waste market stall offering refills every Saturday in Oxford

Wild Oats – Health food shop in Bristol with a large bulk offering.

Better Food Co – Bristol

Poco Restaurant - Bristol, Uk

POCO is a Bristol-based tapas restaurant which has implemented sustainability practices to simultaneously reduce food and packaging waste. Restaurant staff complete a waste measurement record for each of their waste streams: general waste, mixed recyclables, compost, plate waste and glass. Targets for reducing waste are updated annually. Chefs comment on problematic or particularly wasteful dishes so that these can be remedied or altered in subsequent weeks. Since 2013, the restaurant has almost halved its levels of mixed and recyclable waste yet has maintained consistent turnover.

The restaurant sources the majority of its food from local suppliers, who are discouraged from using plastic packaging. 90% of the produce comes from within a 50-mile radius, with the remaining 10% (such as citrus and chilli) being seasonal and never air-freighted. Produce such as bread, roasted coffee beans, lettuce and gin are supplied by Bristol-based producers. Menus are designed so that surplus purchases are not wasted. Food not purchased daily, such as cheese, is stored in reusable containers. Fruit and vegetables are visibly displayed to customers. Ugly vegetables have 'never been an issue, it's the flavour that counts'. Other packaging materials are upcycled, such as turning olive oil containers into plant pots. Customers are also free to take coffee grounds for their own compost.

New patterns of procurement and consumption

Replacing single-use products with reusable ones

Tiffin boxes are reusable stainless steel lunch boxes widely used in food services across South Asia. In Brussels, one initiative has encouraged uptake of this form of reusable packaging through a number of partner restaurants and bike couriers. Customers are encouraged to wash the boxes in which their food was delivered and these are then picked up with their next delivery. Restaurants in Brussels produce 32,000 tonnes of waste per year, of which one-third is packaging waste.

Plastic Reduction Policy

Boston Park Plaza Hotel is an excellent example. Not only did the hotel save money, but hotel executives estimate having generated more than \$750,000 in new business due to clients' desires to support this environmentally conscious establishment.

These are some examples of the over 90 initiatives:

- The installation of shampoo & liquid soap pump dispensers in each guest room resulted in the elimination of 2 million miniature plastic bottles per year.
- The hotel banned the use of disposable napkins, utensils, and cups.
- A survey of hotel guests revealed that 81% never use a shower cap, 89% never use a shoeshine kit - now they are available only by request.
- Through working with suppliers they now have food delivered in reusable containers and cleaning fluids in 15 gallon drums.
- Stained linen tablecloths are made into aprons or donated.
- The Hotel buys recycled products; from hotel stationery to carpeting made of recycled plastic soda bottles.

Alternatives to plastic and biodegradable plastics

Spanish company, Laser Food, has developed food labelling technology. This 'laser marking' provides information such as origin and barcodes without the need for packaging or stickers, saving resources and reducing emissions (laser marking generates 1% of the carbon emissions of a typical sticker on an item of fruit). To date, the technology has been used on melons, oranges, and avocados, with the practice adopted by several large retailers across Europe, including Carrefour (France).

References

- Kehan He, Quanyin Tan, Lixia Zheng & Jinhui Li (2018) Adapting to new policy environment – past pattern and future trend in us-sino waste plastic trade flow, International Journal of Sustainable Development & World Ecology, DOI: [10.1080/13504509.2018.1437845](https://doi.org/10.1080/13504509.2018.1437845).
- Azevedo, S.G., Carvalho, H., Cruz Machado, V., 2011. The influence of green practices on supply chain performance: a case study approach. Transp. Res. E Logist. Transp. Rev. 47, 850e871. <http://dx.doi.org/10.1016/j.tre.2011.05.017>.
- Thompson RC, Swan SH, Moore CJ, vom Saal FS. Our plastic age. Philosophical Transactions of the Royal Society B: Biological Sciences. 2009;364(1526):1973-1976. doi:10.1098/rstb.2009.0054.
- Mourshed, M., Masud, M.H., Rashid, F. et al. Environ Sci Pollut Res (2017) 24: 27021. <https://doi.org.ezproxy.cardiffmet.ac.uk/10.1007/s11356-017-0429-9>
- Dirk Xanthos, Tony R. Walker. International policies to reduce plastic marine pollution from single-use plastics (plastic bags and microbeads): A review
- From waste to sustainable materials management: Three case studies of the transition journey: <https://doi.org/10.1016/j.wasman.2016.11.038>
- Seizing the opportunity: Using plastic only where it makes sense: <http://zerowasteurope.eu/wp-content/uploads/edd-free-downloads-cache/Position-paper-Plastics-reduction-targets.pdf>
- ISO 14051:2011: Environmental management -- Material flow cost accounting - General framework: www.iso.org/standard/50986.html
- Business Guide to Waste Reduction and Recycling: <https://books.google.co.uk/books?isbn=1568063180>
- Plastic Waste in the environment: http://ec.europa.eu/smart-regulation/roadmaps/docs/plan_2016_39_plastic_strategy_en.pdf
- A call for Canada to move toward zero plastic waste by reducing and recycling single-use plastics: <https://doi.org.ezproxy.cardiffmet.ac.uk/10.1016/j.resconrec.2018.02.014>
- How successful are waste abatement campaigns and government policies at reducing plastic waste into the marine environment?: <https://doi.org.ezproxy.cardiffmet.ac.uk/10.1016/j.resconrec.2018.02.014>
- The prospects of zero-packaging grocery stores to improve the social and environmental impacts of the food supply chain : <https://doi.org.ezproxy.cardiffmet.ac.uk/10.1016/j.jclepro.2016.09.227>
- Transportation fuel from plastic: Two cases of study: <https://doi.org.ezproxy.cardiffmet.ac.uk/10.1016/j.jclepro.2016.09.227>
- Economic Models of Material-Product Chains for Environmental Policy Analysis: <https://books.google.co.uk/books?id=WHD2BwAAQBAJ>
- Zero Waste Market Canada's first 100% package-free grocery store tackles plastics pollution and food waste.: www.rcbc.ca/files/u6/RCBC%20Case%20Study%20-%20Zero%20Waste%20Market.pdf
- Zero Waste within the food sector and an evaluation of the package-free distribution of two different food products: <http://lup.lub.lu.se/luur/download?func=downloadFile&recordId=8903648&fileId=8903649>
- https://ac-els-cdn-com.ezproxy.cardiffmet.ac.uk/S221282711730001X/1-s2.0-S221282711730001X-main.pdf?_tid=9b4b13fa-8bc7-4e04-ae2e-84fc37045edd&acdnt=1524579270_cc585f5591d7e23180615bc329507ea7
- https://ac-els-cdn-com.ezproxy.cardiffmet.ac.uk/S0956053X17306335/1-s2.0-S0956053X17306335-main.pdf?_tid=26698d63-6e61-485e-b9d0-7f88c6238648&acdnt=1524579161_c45ab36b3d375501873902b6d48442b3
- file:///C:/Users/Guest/Downloads/ES16%20Koehler,%20Marjolein%20-%20Scriptie%20_xxxx.pdf
- Care for a Sustainable Planet How Multinationals of Beauty Care Products can Reduce Plastic Waste in the Environment
- https://dukespace.lib.duke.edu/dspace/bitstream/handle/10161/9640/MP_PlasticPollutionCoalition.pdf;sequence=1