



REPORT SUMMARY

CURRENT STATUS OF SINGLE-USE PLASTIC BAG CONSUMPTION IN SUPERMARKET CHAINS IN HA NOI

An innovative initiative to establish the alliance of supermarkets to reduce the consumption of single-use plastic bags in Viet Nam

- PLASTIC ALLIANCE PROJECT -

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ACRONYMS

DOIT	Department of Industry and Trade
EPR	Extended Producer Responsibility
EF	Expertise France
ISPONRE	Institute of Strategy and Policy on Natural Resources and Environment
MONRE	Ministry of Natural Resources and Environment
MOU	Memorandum of Understanding
SDGs	Sustainable Development Goals
VND	Vietnamse dong



I. INTRODUCTION

Plastic marine litter is viewed as a global issue, most notably given credit in the Sustainable Development Goals (SDGs)¹. Low- and middle-income countries, Viet Nam included, contributed a significant share of global plastic leakage into the ocean due to weak municipal waste management systems².

The percentage of plastic waste and single-use plastic bags in municipal solid waste in Vietnamese cities has been increasing. Plastic consumption per capita in Viet Nam has increased sharply from 3.8 kg per capita in 1990 to 41.3 kg per capita in 2018³. According to the Ministry of Natural Resources and Environment (MONRE), the annual number of plastic bags turning to waste is approximately 31.4 billion, while only 17% of them were reused and recycled in Viet Nam⁴. This type of single-use plastic quickly ends up in landfills or the environment as a result of inappropriate waste management systems. Single-use plastic consumption and plastic waste management have recently become one of the most important environmental issues in Viet Nam.

Thus, Viet Nam should promote the waste segregation at source and the application of advanced technologies for plastic waste recycling. Furthermore, single-use plastic bags production and consumption need to be reduced; alternative packaging should be developed towards sustainable production and consumption.

Understanding the current status of plastic bags consumption is essential to develop strategies for single-use plastic bag reduction in supermarkets. So far, this kind of information has remained unknown in Ha Noi city. The report aims at investigating the current status of single-use plastic bags in supermarket chains in the city. The result of this study provides helpful information for decision-maker to understand challenges and chances for step-by-step reduction of single-use plastic consumption in supermarkets.

¹ Löhner, A., Savelli, H., Beunen, R., Kalz, M., Ragas, A., & Van Belleghem, F. (2017). Solutions for global marine litter pollution. *Current opinion in environmental sustainability*, 28, 90-99

² Jambeck, J. R., Geyer, R., Wilcox, C., Siegler, T. R., Perryman, M., Andrady, A., ... & Law, K. L. (2015). Plastic waste inputs from land into the ocean. *Science*, 347(6223), 768-771

³ Le Dinh Tuyen (2018), *Plastic waste pose threats on Vietnam's Environment*, <https://th.boell.org/en/2019/11/06/plastic-wastes-pose-threats-vietnams-environment>, access on 5 June, 2021

⁴ Tài Nguyên & Môi Trường (2018), *Cảnh báo « Ô nhiễm trắng »: Thảm họa mới của môi trường*, <https://baotainguyenmoitruong.vn/canh-bao-o-nhiem-trang-tham-hoa-moi-cua-moi-truong-222844.html>, access on June 5, 2021

II. METHODOLOGIES

Data on plastic carrier bags usage were obtained from **48 individual supermarkets** out of a total of approximately 130 supermarkets belonging to 6 supermarket chains (Vinmart, Big C, MM Mega Markets, Annam Gourmet, Sài Gòn Co.op, Đức Thành) in the area of Ha Noi city. Data collection was conducted by face-to-face interviews with supermarket managers. Additional secondary data were obtained from DOIT. The data were analysed to obtain the results below.

To identify the typology of plastic bags used in supermarkets, we observed customers at a cashier of one supermarket for few hours. Also, we obtained results from another study of the author about the ideas of customers on single-use plastic waste reduction in supermarkets.

III. CURRENT STATUS OF SINGLE-USE PLASTIC BAGS IN SUPERMARKET CHAINS IN HA NOI, VIET NAM



*Photo: <http://thoidaiph.us.vn/>

1. Plastic bag consumption in supermarkets

On average, the number of single-use plastic bags in the **48 supermarkets** was about **104,000 a day**, equivalent to 38 million plastic bags a year. **46 out of 48 supermarkets provided free plastic carrier bags**, in which above 40 supermarkets used “environmentally friendly plastic bags” (defined according to Circular No. 07/2012/TT-BTNMT providing the criteria, order of and procedures for recognition of environment friendly plastic bags) and six used traditional plastic bags. Two supermarkets stopped providing single-use plastic bags at cashiers (Annam Gourmet and Mega Market). On average, **a single supermarket used approximately 1,454 plastic bags per day, ranging from 70 to 2,800 bags per day depending on the respective size of the supermarket**. Figure 1 shows that there is a strong correlation between the number of plastic bags used and the number of bills. The number of plastic bags used in a supermarket can be forecasted by Equation 1, with the coefficient of determination (R^2) of 0.9288. It means that **for each purchase of products, supermarkets hand out about 1.6 plastic bags**.

The number of plastic bags = The number of bills × 1.5877 (plastic bags/day) (1)

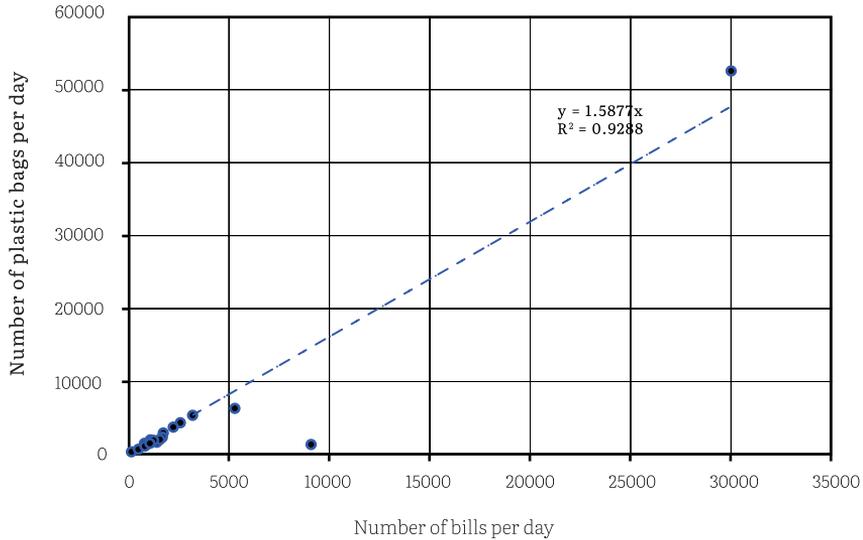


Figure 1: Correlation of plastic bags and bills of supermarket

2. Types of plastic bags used in supermarkets

a. Types of plastic bags and containers used in different areas in supermarkets

Cashiers and fresh food areas are plastic bag hotspots in supermarkets. Types of plastic bags and suppliers varied. The following types of plastic bags and plastic containers in supermarkets can be identified:



*Photo: eMagazine

Plastic carrier bags: This type of plastic bags is provided to customers at cashiers.



*Photo: tsungulocal

Plastic containers or wrapping from suppliers: This type of plastic container is from supermarkets' product suppliers. Usually, supermarkets do not have to pay for them, and they did not count this amount of plastic in their report to DOIT.



Very thin plastic bags in rolls for fresh food: Customers can take as many as they need of this kind of bags to pack their fruits, vegetables, or other fresh food.



*Photo: tieudungplus

Foam trays and thin films: These types of food containers were prepared by both suppliers and supermarkets, depending on the respective products.

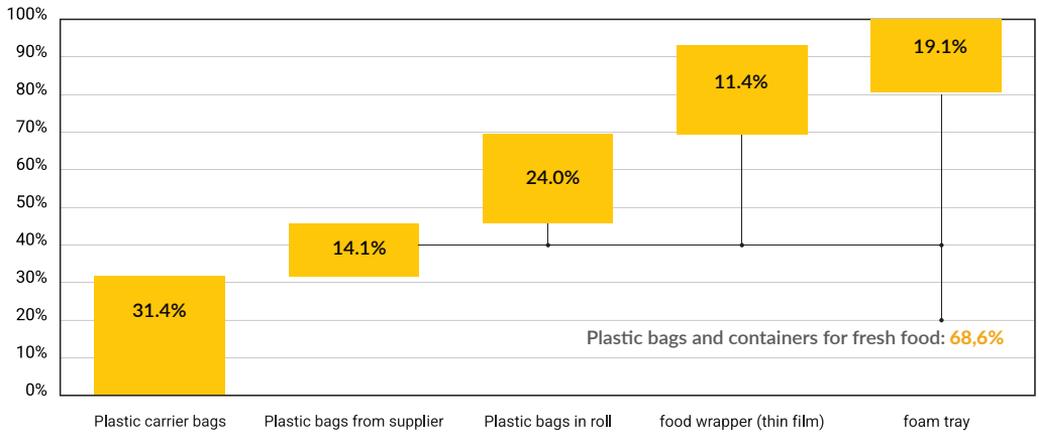


Figure 2: Percentage of different single plastic bags observed in a supermarket

Figure 2 presents the percentage of different types of plastic bags and containers in a supermarket, including plastic carrier bags, plastic containers from suppliers, very thin plastic bags in rolls, food wrapping and foam trays. It was not easy to distinguish between plastic packs (foam trays and thin films) prepared by suppliers or supermarkets during the survey. Thus, we assumed that the percentage of the plastic package provided by suppliers is about 20 - 30% of the total amount of foam trays and thin films, which is equivalent to 5 - 10% of the total plastic package. We can estimate that the amount of plastic in supermarkets provided by suppliers is about 20-25%. Working with suppliers to reduce plastic containers is also a potential option to reduce single-use plastic in supermarkets. Stopping the provision of plastic carrier bags at cashiers is the most effective option to reduce plastic bag consumption.

b. Typologies of plastic bags in supermarkets

Meanwhile, “degradable bags” (“túi phân hủy” or “túi tự hủy” in Vietnamese) are made from a blend of bio-additives, such as starch (PSM – Plant Starch Material, for example), and traditional plastics such as PP, PE and polystyrene (PS). These blends often consist of 70% plastic, known as **oxo-degradable plastic**. This type of plastic is not compostable or biodegradable⁵. If degradable bags are released into our environment, they become problematic as they break down into hundreds of tiny pieces of plastics (microplastic). In both film extrusion and injection molding applications, there are additive technologies where bio-additives (such as starch) are added to traditional plastic (such as PP, PE, PS, etc.) and falsely marketed as compostable and biodegradable.



Figure 3 : Degradable plastic bags misleadingly marketed as “biodegradable food bag”

⁵ Naturebag, Oxo-Degradable Plastics, <https://naturbag.com/oxodegradable-plastics/>, access on June 5, 2021

The “Circular 07/2012/TT-BTNMT, issued on 4 July 2012, providing on criterion of, order of, procedures for recognition of environmentally friendly nylon bags” did not classify oxo-degradable and biodegradable plastic bags. The criteria for “environment friendly” plastic bags in the Article 8 of this Circular consider both oxo-degradable and biodegradable plastic bags as environmentally friendly nylon bags. Thus, environmentally friendly plastic bags might still harm the environment. Regulations for the classification of biodegradable plastic and degradable plastic is needed for sustainable consumption of plastic in Viet Nam.

3. Cost for plastic bags in supermarkets

Due to providing free plastic bags to customers, a supermarket spent from approximately **775,000 VND to 19,000,000 VND** a month.



Photo: Nguyen Minh Duong

The average plastic bag costs of surveyed supermarkets were about **11,000,000 VND**. Supermarkets shared that the money spent on cashier plastic bags accounted for approximately **0.2% of revenue**. Supermarkets in this survey spent more than **1 billion VND** per month on plastic bags.

On average, supermarkets have to pay an extra **40.98 VND and 340 VND for plastic bags for a sold item and a bill, respectively**. If supermarkets would stop handing out single-use plastic carrier bags for free and e.g. sell some reusable bags, they could save money and even earn money.

4. Supermarkets' attitudes



Figure 4: Supermarket's reasons to keep using plastic bags



According to our survey, **the low price of plastic bags is important drivers of using plastic bags in supermarkets** (Figure 4). Another important reason for supermarkets to keep using plastic bags is its convenience and hygiene (44%). Fresh products were perceived as the most controversial issue for the question whether single-use plastics could be reduced. On the one hand, the plastic wrapping and bags can keep food longer fresh and cleaner. On the other hand, according to Peake L.⁶, packaged food is often oversupplied to customers – e.g. customers who need few potatoes are led to buy an entire bag wrapped in plastics.

Around **67% of supermarkets are willing to stop providing plastic bags for free** to their customers (Figure 5). They need time (more than a year) to change it step by step to be ready in 2023. They also require that all supermarkets implement this action jointly to avoid competitive disadvantages. Around 33% of supermarkets did not agree to implement this initiative, claiming that there is hardly any better alternative solution for the single-use plastic bags in retail business.

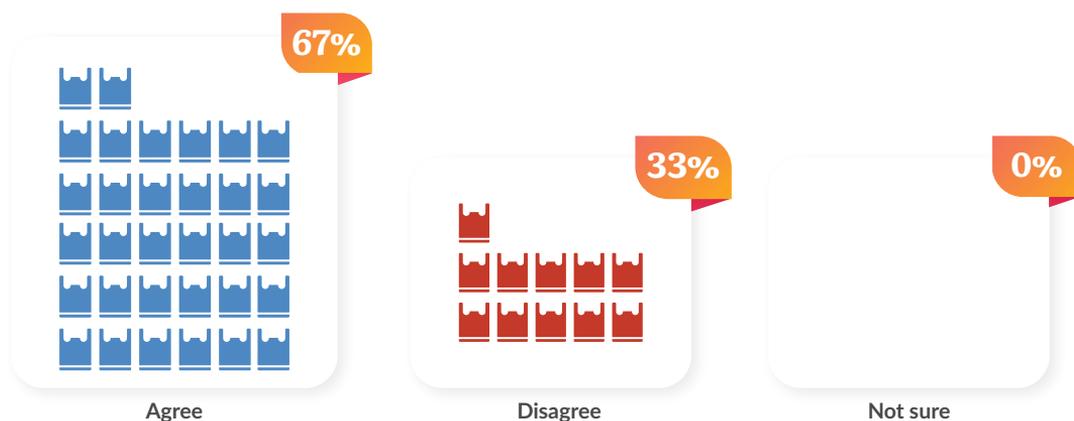


Figure 5: Stop providing free plastic bags from 01/01/2023

⁶ Peake L. (2020), Plastic promises: what the grocery sector is really doing about packaging. https://green-alliance.org.uk/resources/Plastic_promises.pdf, access on 18 April, 2021

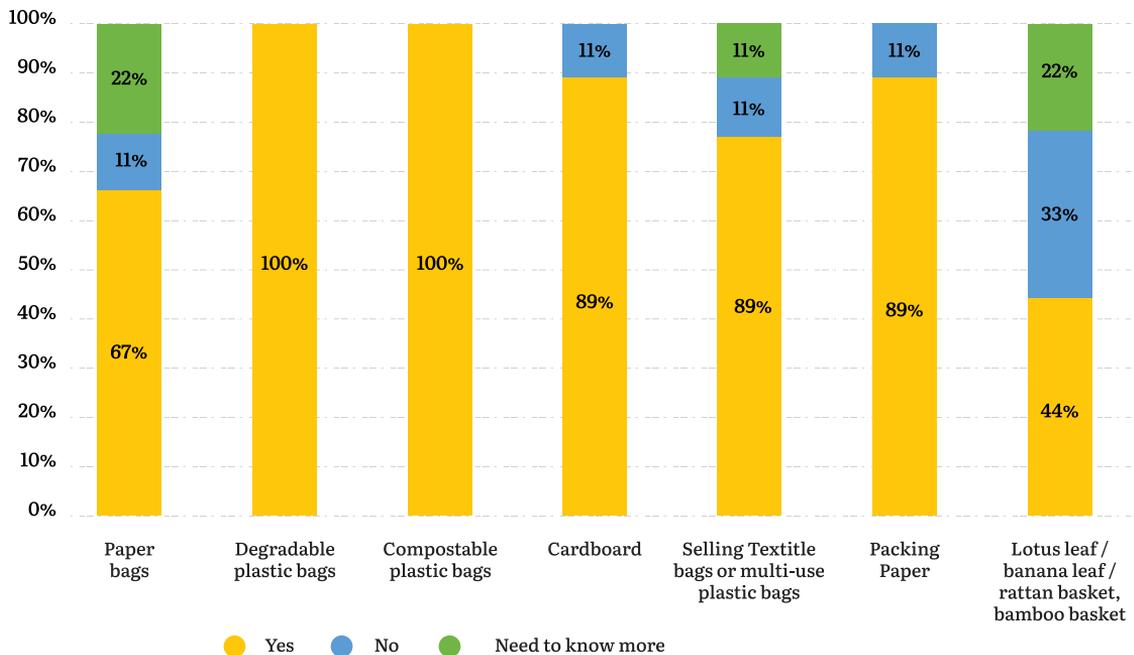


Figure 6: Evaluation of supermarket on alternative solutions

When given ideas about alternative solutions, supermarket representatives found many feasible options, especially for plastic bags used at cashiers. Despite the higher price, degradable and compostable plastic bags are perceived as potential alternative options and as solution for the first stage before completely stopping using single-use plastic bags (Figure 6). However, degradable bags with PE or PP synthetic materials should be avoided due to their environmental harm. Paper bags were seen as less attractive due to their higher price and weaker strength. Providing cardboard or selling multi-use bags were also perceived as good solutions – about 90% of supermarkets chose them as potential solutions.

For fresh food, packaging paper was preferred compared to organic material due to hygiene concerns. However, some supermarket representatives shared that packaging paper is much more expensive and should be carefully considered with regards to the costs and benefits of supermarkets.

IV. CONCLUSION

Supermarkets in Ha Noi hand out between 70 to 2,800 single-use plastic bags per day. Most of them go to landfills including unsanitary landfills and open dumping/burning. On average, **one purchase in a supermarket (one bill) is accompanied by the free handout of 1.6 single-use plastic carrier bags.**

The percentage of plastic carrier bags distributed at cashier accounted for more than 30% of the total number of plastic bags. Regarding the amount of total plastic packing supermarkets bought for their business, plastic carrier bags accounted for over 50%. **Stopping the free provision of single-use plastic carrier bags** at cashiers would have a significant impact and help supermarkets save costs.

The money spent on cashier plastic bags accounted for approximately 0.2% of the revenue of supermarkets. Therefore, if supermarkets would stop handing out single-use plastic carrier bags for free and e.g. sell some reusable bags, they could **save money and even earn money.**

The proportion of plastic bags provided by suppliers is about 20-25%. Working with suppliers to reduce plastic containers is also a potential option to reduce single-use plastics in supermarkets. International experiences show that misting technology investment to keep food fresh can increase their sale, reduce food waste and plastic consumption.

All supermarkets surveyed believed that “environmentally friendly” plastic bags (degradable and biodegradable plastic bags) are the best alternative option for conventional plastic bags. However, **regulations for the classification of biodegradable, compostable and oxo-degradable plastic is lacking in Viet Nam.** Oxo-degradable plastic still harms the environment with micro-plastics and heavy metals after being degraded. Furthermore, waste separation at source and composting treatment facilities are required to use biodegradable and compostable plastic bags. Otherwise, using compostable and biodegradable plastic become another organic pollution source. Meanwhile, organic waste treatment capacity (composting and anaerobic digestion) is still an essential problem of the waste management system in Ha Noi and in Viet Nam in general. In addition, organic waste separation at source is not yet implemented in Viet Nam. Thus, applying biodegradable and compostable plastic as an alternative for plastic bags should be carefully considered in the context of the actual capacity of the solid waste treatment system.

Using **reusable, multiple-use bags or providing cardboard** for carrying products are highly potential solutions. Supermarkets can also sell durable, reusable bags for earning more benefit or create borrowing schemes to increase customer loyalty.

For fresh food, packaging paper was preferred over organic material due to hygiene concerns. More sustainable solutions might be investing in technologies.

Overall, there are various solutions to deal with plastic bags reduction. The successful and unsuccessful international experiences demonstrated that the **agreement of all stakeholders and public awareness-raising** are crucial aspects and should be conducted before and hand in hand with any policy implementation.

V. RECOMMENDATIONS

1. Getting mutual agreement among related stakeholders to stop providing free plastic bags at cashiers

A Memorandum of Understanding (MOU) between supermarket chains, public authorities and other relevant stakeholders can serve to **create a mutual agreement** for their actions to reduce the consumption of single-use plastic bags. The MOU should focus on a particular action for all supermarkets such as **stopping the free of charge distribution of plastic bags** to customers rather than only setting a general reduction target without any joint action. Setting reduction targets and monitoring progress can be helpful as additional instruments to stopping free handout of plastic bags.

Workshops and meetings among supermarkets, public authorities and related stakeholders should take place to **discuss the details** of any new policy or MOU for reducing single-use plastic bags.

Furthermore, **low-income customers** should be considered in any supermarket programme. Retailers should establish an effective deposit-return scheme for any rental or borrowing of bags to help low-income customers and motivate them to reuse their bags instead of buying new ones.

As the results of this study show, stopping the distribution of free plastic bags should be a priority due to its significant positive impacts on single-use plastic bag reduction targets. Supermarkets can also save costs with it. Retailers have an important role to play in encouraging customers to bring their own bags. There is a variety of **incentives that enable customers** to stop requiring single-use plastic carrier bags⁷:

1. Customers can purchase durable, reusable bags
2. Provide a borrow-a-bag or rent-a-bag scheme for customers who forget to bring their own
3. Use online checkouts and digital technology to encourage participation

To stop providing free plastic bags could be the first step towards an extended producer responsibility (EPR) framework for packaging waste, one of six targets of an EPR mechanism regulated by the Environmental Law 2020 that Viet Nam aims to take effect in 2022. EPR for packaging waste requires increased responsibility of the enterprises in the packaging value chain. The legal framework needs to clearly define what types of packaging and which businesses must pay fees. It is necessary to clearly define their roles and responsibilities for financial flows in Viet Nam.

⁷ Green peace (2019), *THE SMART SUPERMARKET: How retailers can innovate beyond single-use plastics and packaging*

2. Intensive and extensive communication campaigns

Social acceptance and customers' support is a crucial success factor for a single-use plastic bag reduction programme. Supermarkets, public authorities and other stakeholders need to collaborate to run effective communication programmes to raise the awareness of customers and gain their support.

3. Technology application and developments

Green technology in labelling and keeping food fresh or new alternative products are essential to reduce the need of food wrapping. It requires investments and the calculation of operational, possibly affecting supermarkets' revenue and customers' expenses. However, it is essential to ensure the sustainability of the system.

Practical implementation to solve fresh food plastic problems were presented in the following case studies:

1. For labelling and identification of food, innovative technology such as laser marking directly on food, can replace the need for single-use plastics, which are used for branding and marketing purposes
2. Natural and local material wrapping such as paper, banana and other green leaves
3. Investment in technology and facilities to keep produce fresh such as « Misting » technology (i.e. the creation of humid air to hydrate fruits and vegetables)
4. Customers can use their own containers. However, this option requires clear hygiene standards.

4. Continuous monitoring plan

A detailed and precise monitoring plan is key to verify whether the measure are successful. Authorities should develop a monitoring programme with all supermarkets, while supermarkets also need their own plan to check their measures and collect data. Changing ineffective measures and policy is essential to sustain the whole system.

An effective measure is to require supermarket chains to collect data on the types and amounts of plastic bags and containers that they sell. The data can be used to measure the impact of an supermarket action plan.

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