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**PHÂN TÍCH VIỆC ÁP DỤNG CHUỖI CUNG ỨNG TUẦN HOÀN TRONG NGÀNH
HÀNG TIÊU DÙNG NHANH TẠI VIỆT NAM: TRƯỜNG HỢP UNILEVER VIỆT
NAM**

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Tóm tắt

Việt Nam hàng năm phát sinh khoảng 1,8 triệu tấn rác thải nhựa, trong đó chỉ một phần nhỏ lượng rác thải được tái chế đúng cách. Vấn đề môi trường này nhấn mạnh sự cần thiết trong việc áp dụng thực hành chuỗi cung ứng tuần hoàn (CSC), đặc biệt trong ngành hàng tiêu dùng nhanh (FMCG), vốn phụ thuộc nhiều vào bao bì sử dụng một lần và có khối lượng vật liệu lớn. Việc triển khai CSC có thể giúp giảm chất thải, thu hồi tài nguyên và nâng cao tính bền vững tổng thể của ngành. Do đó, bài báo cáo tập trung phân tích hiện trạng áp dụng CSC trong ngành FMCG tại Việt Nam, làm nổi bật các yếu tố thúc đẩy doanh nghiệp chuyển đổi cũng như những

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rào cản họ gặp phải trong quá trình thực hiện. Ngoài ra, trọng tâm nghiên cứu được đặt vào Unilever Việt Nam thông qua việc xem xét cách công ty tích hợp các nguyên tắc kinh tế tuần hoàn trong các giai đoạn thiết kế, sản xuất, tiêu dùng và tái chế. Cuối cùng, nghiên cứu đưa ra các khuyến nghị thực tiễn dành cho các cơ quan nhà nước và doanh nghiệp nhằm thúc đẩy việc triển khai CSC một cách hiệu quả.

Từ khóa: chuỗi cung ứng tuần hoàn, FMCG, Việt Nam, bền vững

ANALYSIS OF CIRCULAR SUPPLY CHAIN ADOPTION IN VIETNAM FAST-MOVING CONSUMER GOODS INDUSTRY: THE CASE OF UNILEVER VIETNAM

Abstract

Vietnam generates around 1.8 million tonnes of plastic waste annually, of which only a small proportion is properly recycled. This environmental issue highlights the critical need for adopting circular supply chain (CSC) practices, particularly in the fast-moving consumer goods (FMCG) industry, which relies heavily on single-use packaging and has high material throughput. Implementing CSC can help reduce waste, recover resources, and enhance overall sustainability across the sector. Therefore, this paper analyzes the current status of CSC adoption in Vietnam's FMCG sector, highlighting the drivers that encourage companies to transition as well as the barriers they face in implementation. A particular focus is given to Unilever Vietnam as a case study, examining how the company integrates circular economy

principles across design, production, consumption, and recycling stages. Finally, the research concludes with practical recommendations for government and business stakeholders to facilitate effective CSC implementation.

Keywords: circular supply chain, FMCG, Viet Nam, sustainability

1. Introduction

Vietnam produces about 1.8 million tonnes of plastic waste annually, with only a small fraction recycled. The fast-moving consumer goods (FMCG) sector, reliant on single-use packaging, contributes significantly to this problem, which exacerbates plastic pollution, carbon emissions, and inefficient resource use. Despite these challenges, many FMCG companies in Vietnam continue to operate under a linear “take-make-dispose” supply chain model. Such a model limits opportunities to reduce waste, recover materials, and improve overall resource efficiency, which therefore highlights the need for the adoption of circular supply chain (CSC) practices. Unilever Vietnam, as a leading FMCG company, has addressed these challenges by adopting circular economy principles across its key supply chain stages, including product design, production, consumption, and recycling, which aims to maximize resource use and minimize residual waste.

This paper aims to (i) assess the current status of CSC adoption among FMCG companies in Vietnam, (ii) conduct a case study on Unilever Vietnam to analyze its circular practices across the supply chain, and (iii) thereby provide recommendations for both government agencies and businesses to facilitate the practical implementation of CSC practices. The analysis and recommendations are based on the collection and synthesis of secondary data from reputable sources, including news articles, corporate reports, and industry publications.

2. Theoretical framework

The circular economy (CE) is increasingly recognized as a more sustainable alternative to the linear “take - make - dispose” model. Instead of allowing materials to become waste, the CE model promotes designing out waste, keeping products and resources in use for as long as possible. A circular supply chain (CSC) extends the CE philosophy into supply chain operations by keeping resources in circulation for as long as possible. In a CSC, products, materials, and components move through restorative loops rather than exiting the system as waste (Alex Comerford, 2024).

The CSC model applies the 7R principles to guide actions that reduce waste and keep resources in use for longer (Mark Jackley, 2023)

- Redesign products to include recycled materials
- Reuse everything possible, both materials and unwanted products

- Repair products affordably, with less hassle for consumers
- Recover used materials and products instead of letting them go into waste
- Recycle raw materials
- Reduce waste by teaching consumers to buy with more discretion
- Refurbish used products and extend their lives

Building on these 7R principles and grounded in the CE, the CSC operates as a closed-loop system, where materials flow through interconnected stages:

1. **Design:** Products are designed to minimize waste, extend lifespan, and enable easy disassembly for reuse, repair, or recycling.
2. **Production:** Materials are transformed into new or remanufactured products using resource-efficient and low-waste processes
3. **Distribution:** Finished products are delivered to retailers or consumers through optimized, low-impact logistics systems.
4. **Consumption:** Consumers use products while being encouraged to practice responsible consumption, reuse, repair, and waste segregation, helping keep materials circulating in the system.
5. **Collection and Recycling:** End-of-use products are collected, sorted, and recycled to recover raw materials, which are reintegrated into the next design and production cycle after removing residual waste.



Figure 1: CSC flow based on CE principles

Source: Sarah King et al., 2021

3. Analysis of Circular Supply Chain Adoption in Vietnam's FMCG Industry

3.1. General Characteristics of FMCG

Fast-moving consumer goods (FMCG) refer to products that are sold quickly at relatively low cost and have a high turnover rate. These items are either perishable or consumed rapidly due to frequent demand. Despite low profit per item, their high sales volumes generate significant cumulative profits. Accordingly, the FMCG supply chain must be designed to handle high product turnover, short shelf lives, and fluctuating consumer demand.

3.2. Market Overview and Post-Pandemic Recovery of Vietnam's FMCG Industry

The FMCG sector in Vietnam was significantly disrupted by the COVID-19 pandemic. In 2020, growth slowed due to social distancing measures and restrictions on retail activities. The following year continued to pose challenges, especially in the Southern region, as household consumption declined and the beverage sector was hit hardest. However, certain categories, such as milk and packaged foods, maintained growth, supported by at-home consumption and online purchases (Masan Annual Report, p.34, 2021). In 2022, the market experienced a strong recovery, recording an impressive 17.5% growth compared to the previous year, surpassing pre-pandemic levels, and this year can be considered the point when Vietnam's FMCG sector truly rebounded (Nielsen, 2023). Since then, the sector has continued to experience stable growth.

3.3. Current Status of Circular Supply Chain Adoption in Vietnam's FMCG Industry

3.3.1. Level of Circular Supply Chain Adoption in Vietnam's FMCG Industry

According to the Vice Chairman of Vietnam Chamber of Commerce and Industry, 90% of FMCG companies in Vietnam have adopted a circular economy model. However, 82% of these firms have implemented the model at only a preliminary or intermediate level without full supply chain integration. Foreign-invested and multinational FMCG companies are generally leading in this transition, which implements more comprehensive circular practices than local firms. This advantage stems from greater access to resources, international experience, and stricter environmental standards imposed by international markets. Pioneering examples of circular initiatives include global players such as Nestlé, Coca-Cola, and Unilever.

3.3.2. Drivers for Circular Supply Chain Transition in Vietnam's FMCG Industry

a. Internal Drivers

A major advantage of the CSC is that it increases economic and operational efficiency by helping firms reduce production costs, minimize material and energy waste, and optimize waste management processes. This practical incentive is particularly compelling for firms where profitability and cost efficiency heavily influence their willingness to adopt circular practices. In addition, CSC strengthens resilience and supply chain stability, allowing companies to respond more flexibly to fluctuations in raw material supply, mitigate risks from

resource shortages, and reduce vulnerability to disruptions. (Dr. Nguyen Thi Phong Lan & MA. Nguyen Thi Kim Ngan, n.d.)

b. External Drivers

Regulatory and financial pressures are the primary external drivers for CSC adoption. The only mandatory requirement related to circularity is Extended Producer Responsibility (EPR): producers must take responsibility for collecting and recycling product packaging (especially for foods, beverages, chemicals, and household goods) or pay the corresponding EPR fees from 2024. While this represents only a small part of the overall CE, it does not compel companies to establish a fully CSC. Meanwhile, the government, through the Environmental Protection Fund (EPF), collects EPR contributions from producers and channels these funds to support recycling activities. This mechanism offers a potential financial incentive for recyclers to invest in infrastructure and enhance their operational capacity. Besides, macroeconomic instability and resource scarcity also drive firms to optimize supply chains and improve resource efficiency. In Vietnam, rapid economic growth and a growing population have increased resource demand, while the country has faced resource shortages, such as becoming a net coal importer since 2015 (Thuy Trinh Thu, 2023).

3.3.3. Barriers to Circular Supply Chain Adoption

Institutional and policy barriers remain significant. Although the Law on Environmental Protection 2020 and Decree 08/2022/ND-CP introduce CE concepts and some business incentives, these provisions are primarily advisory and encouraging rather than mandatory. They do not mandate circular practices across the entire supply chain. Clear standards or criteria to assess the level of circularity are still missing, and enforcement mechanisms, such as inspections, reporting requirements, and audits, are limited and inconsistently applied. Moreover, the market for eco-friendly, recycled, and secondary products is underdeveloped.

Furthermore, transitioning to CSC requires significant financial and technological resources that many Vietnamese firms cannot currently meet. Many firms still operate with outdated technologies, small-scale production, and low innovation capability. The shortage of skilled experts in design, recycling, and resource recovery further constrains circular implementation within enterprises. In addition, awareness of circular principles remains low among both businesses and consumers. Many still confuse circular practices with general “green” or environmental initiatives, while sustainable consumption behavior is not yet widespread (Thuy Trinh Thu, 2023).

4. Case Study of Unilever Vietnam's Circular Supply Chain Practices

4.1. Company Overview

4.1.1. Unilever Global

a. Company Overview

Unilever, one of the world’s largest FMCG corporations, was officially established on 1st January 1930 through the merger of Dutch margarine producer Margarine Unie and the British soap manufacturer Lever Brothers. This merger was noted by *The Economist* as one of the biggest industrial amalgamations in European history. Today, Unilever operates in more than 190 countries, serving approximately 3.4 billion consumers every day, with emerging markets accounting for around 58% of its global turnover (Unilever Annual Report and Accounts, 2024). Its global operations are structured around five core business groups: Beauty & Wellbeing, Personal Care, Home Care, Foods, and Ice Cream.

b. Sustainability Commitments

Unilever’s core strategy is guided by the “Compass Strategy”, which places sustainability at the core of its business model, built on the belief that "doing business the right way drives superior performance. This strategy is built around four global ambitions:

- Climate: To deliver net zero emissions across the entire value chain.
- Nature: To deliver resilient and regenerative ecosystems.
- Plastics: To achieve an end to plastic pollution through reduction, recycling, and collaboration.
- Livelihoods: To improve the livelihoods of people throughout the global value chain.

The Waste-Free World Commitment is an integral part of Unilever’s sustainability strategy, directly linked to the Compass Strategy, particularly the Plastics goal. This global initiative aims to eliminate plastic waste, increase the use of recycled plastics, and promote CE across the entire packaging lifecycle.

Table 1: Circular Economy and Plastic Waste Targets

Goal Area	Target Indicator	Deadline	2024 Progress
Virgin Plastic Reduction	Reduce virgin plastic footprint by 40% (vs. 2019)	2028	23% reduction achieved
Recycled Plastic Content	Use 25% recycled plastic in packaging	2025	21% used in packaging
Collection & Processing	Collect and process more plastic packaging than is sold	2025	93% collected and processed

Recyclable/Compostable (Rigid Plastic)	100% of plastic packaging to be reusable, recyclable, or compostable	2030	76% of rigid plastic achieved
Recyclable/Compostable (Flexible Plastic)	100% of plastic packaging to be reusable, recyclable, or compostable	2035	13% of flexible plastic achieved

Source: Unilever Annual Report and Accounts 2024

4.1.2. Unilever Vietnam

Following Unilever’s global expansion strategy into emerging markets during the 1990s, Unilever Vietnam International Co., Ltd. was officially established in 1995. In Vietnam, Unilever’s entry coincided with the early stage of Đổi Mới (the country’s market-oriented reform period), when the government encouraged foreign direct investment in consumer goods manufacturing. Since then, the firm has been widely regarded as a market leader and industry benchmark in Vietnam’s FMCG sector. With a portfolio of more than 20 household brands, Unilever Vietnam holds dominant market shares across key segments, including home care, personal care, and food. Its nationwide distribution system, encompassing over 140 distributors and around 300,000 retail outlets (Phuong Thảo, 2025), allows extensive market penetration into both urban and rural areas.

Alongside business growth, sustainability is central to Unilever Vietnam’s vision, reflected in its philosophy of “Making Vietnamese Lives Better.” The company achieved net-zero emissions across internal operations in 2021, nine years ahead of its global target, and promotes CE initiatives, including plastic waste management and tree-planting campaigns. Looking ahead, Unilever Vietnam aims to digitally transform its supply chain, improve livelihoods, and ensure 100% of its plastic packaging is recyclable or biodegradable by 2035. These initiatives all align well with the Unilever Compass principles.

4.2. Circular Supply Chain Practices of Unilever Vietnam

4.2.1. Design

a. Packaging Design

Unilever Vietnam integrates circularity at the packaging design stage through the “Less Plastic - Better Plastic - No Plastic” framework, aligned with Unilever Global’s 2025 commitments: ensuring that 100% of its packaging is reusable, recyclable, or compostable, and reducing virgin plastic use by 50% through both absolute reduction and increased incorporation of post-consumer recycled (PCR) materials.

To improve packaging recyclability, Unilever redesigns materials and packaging structures by transitioning to mono-material formats, adopting recyclable label films, and using biodegradable formulations that are compatible with Vietnam’s sorting and recycling systems. Currently, 63% of Unilever Vietnam’s packaging is recyclable or easily biodegradable, and several major brands, such as OMO, Comfort, Sunlight, Cif, and Lifebuoy, have introduced water-saving and biodegradable product formulas (Báo Thanh Niên, 2023). In addition, bottles from Sunlight, Lux, and Love Beauty & Planet now contain 100% PCR plastic (Unilever, 2023a)



Figure 2: Bottles from Sunlight, Comfort, Love Beauty&Planet contain 100% PCR

Source: Unilever PLC, 2021b

Unilever also reduces its environmental footprint by decreasing virgin plastic use through lightweight packaging, material optimization, and replacing virgin resins with PCR plastic, which also lowers carbon emissions across the packaging lifecycle. Refill-led solutions, such as Comfort refill pouches and previous refill stations for Sunlight, promote bottle reuse and significantly reduce single-use plastic consumption. These initiatives have resulted in a 52% reduction in virgin plastic used in packaging, and selected Home Care products are set to eliminate 100% of fossil-carbon-based ingredients in both packaging and formulas.



Figure 3: Activities encouraging consumers to purchase refill pouches to refill their empty bottles at home

Source: Unilever PLC, 2021

Beyond plastic reduction, Unilever also innovates with non-plastic alternatives by introducing formats such as bar soaps, bamboo toothbrushes, and refillable deodorant sticks with replaceable cores, which contribute to a broader shift toward sustainable, low-impact packaging solutions.



Figure 4: Some personal care products with replaceable cores

Source: Unilever PLC, 2021

b. Sourcing Design

In terms of circular sourcing practices, Unilever Vietnam requires all suppliers and business partners to comply with its Responsible Policy Partners (RPP), which sets mandatory standards on environmental management, labor practices, ethics, and circular-resource use. Suppliers must align their own internal policies with RPP requirements, register on the Unilever Supplier Qualification System, undergo third-party audits, and implement corrective actions when needed (Unilever - RRP Vietnamese Report, 2022). This system ensures that upstream sourcing aligns with Unilever's circular practices and responsible supply chain objectives. In addition, Unilever Vietnam promotes net-zero supplier collaboration by prioritizing green transformation across its entire supply chain, requiring suppliers to reduce emissions, adopt renewable energy, and optimize transportation. Workshops are regularly organized to support supply chain partners in developing emission-reduction roadmaps and accessing technology, standards, and financial solutions from organizations such as the Ministry of Industry and Trade, HSBC, and BSI (Quyết Thắng, 2025)

4.2.2. Production

a. Transition to clean energy and sustainable technologies

Unilever Vietnam has been a pioneer in clean manufacturing by integrating renewable energy and technological innovation into its operations. Since 2007, the company has replaced fossil fuels with biomass made from recycled wooden pallets, paper scraps, and rice husks to fuel industrial boilers, eliminating nearly 10,000 tons of CO₂ annually. Solar energy systems and energy-efficient solutions have been deployed across production lines, while all refrigeration systems have been upgraded to ozone-friendly refrigerants. By 2021, its two factories in Củ Chi and Bắc Ninh achieved Net-Zero carbon status for operational emissions, while all facilities transitioned to renewable electricity through I-REC (International

Renewable Energy Certificate) purchases (Báo Điện tử Chính phủ, 2025). This has helped reduce greenhouse gas emissions and energy consumption in the company's production process.

b. Integrating circular operations

Unilever Vietnam integrates circularity into its operations by incorporating recycled and recovered materials as input resources in production. Plastic waste collected from households, local communities, and partner organizations is sorted, cleaned, and processed into PCR plastic pellets. These PCR pellets are then fed back into Unilever's packaging production lines to manufacture bottles and containers for products (Thanh Van, 2023).

4.2.3. Consumption

a. Education and media

Unilever Vietnam conducts a series of social projects to raise people's awareness about the CE model, recycling, collection, and waste segregation via conferences, national television channels, distribution channels, supermarkets, schools, and residential communities. By the end of 2023, Unilever had communicated and provided education on waste separation at source to nearly 12 million people through mass media channels (VCCI, 2023b).

b. Community campaigns

In 2021, Unilever cooperated with Hanoi Urban Environment Company Limited (URENCO) to implement a waste sorting program at source in many residential areas in Hanoi. The project co-implemented by Unilever Vietnam has collected 997 tons of mixed waste, including plastic, paper, and metal. Of which, plastic waste alone is 342 tons (Unilever, 2021a). Since 2020, Unilever Vietnam has also launched the model "Waste-for-gifts" green days in Hanoi. Unilever educated and promoted the community about waste classification at source for more than 41,400 households, 32 schools with more than 15,000 students. Through this program, Unilever classified and collected more than 12,000 tons of plastic waste. (Vietcycle, 2022)

4.2.4. Collection and recycling

Unilever Vietnam achieves significant success thanks to pioneering public-private collaboration (PPC) with the objectives of conducting waste collection and management practices that the company cannot solve itself. Launched in 2020, PPC between Unilever Vietnam, Duy Tan recycling company, and the Ministry of Natural Resources and Environment (MONRE), aims to build a circular economic ecosystem for plastic packaging and promote waste segregation at source, collection, recycling, and reuse of post-consumer packaging. As one of the founders, Unilever Vietnam has committed to collecting plastic waste from communities. From 2021 to 2025, the Plastic Reborn Project was one of the first efforts by Unilever Vietnam and VietCycle. The project helps collect a large amount of recycled plastic waste and builds two plastic waste classification and collection systems in Hanoi, where waste

becomes a resource, while providing jobs for women, freelance labourers, and disadvantaged people. Over the past five years, the project has collected more than 40,000 tons of plastic waste, reducing carbon emissions by 160 million tons (Vietcycle, 2025). In the period 2020 - 2024, Unilever successfully collected and recycled more than 25,000 tons of plastic waste, achieving around 83% of its original target of 30,000 tons in 2027 (Unilever, 2023b).

Besides its own technology, Unilever Vietnam also partners with Duy Tan recycling company, specializing in the sorting and recycling process. Duy Tan recycling, the leading recycling company in Vietnam helps Unilever find solutions to treat the end - to - end recycling. Duy Tan company applies modern technology called “Bottles to bottles”. From the used and collected plastic bottles at the source, the factory conducts a series of treatment and production steps to make PCR plastic granules, which are then used to manufacture new packaging for Unilever products. (Unilever, 2023b). Finally, the MONRE plays a key role in policy-making, coordination, and legal support to ensure that the operational model complies with the Environmental Protection Law. The presence of the regulatory authority enhances transparency, accountability, and the potential to scale the model to other localities.

4.3. Successes and Challenges of Unilever Vietnam’s CSC Implementation

4.3.1. Successes

a. Optimizing costs

Firstly, the application of the CSC helps Unilever Vietnam minimize production costs by utilizing PCR. The transformation from using virgin plastic to PCR plastic increases energy efficiency and reduces energy costs in production. A study that analyzes the energy intensity of producing virgin plastics compared with recycled plastics shows that manufacturing virgin plastics requires significantly higher energy consumption than producing recycled plastics (Wong, C, 2009). As a result, using PCR reduces demand for energy such as thermal and electricity, which is more cost-effective and energy-saving.

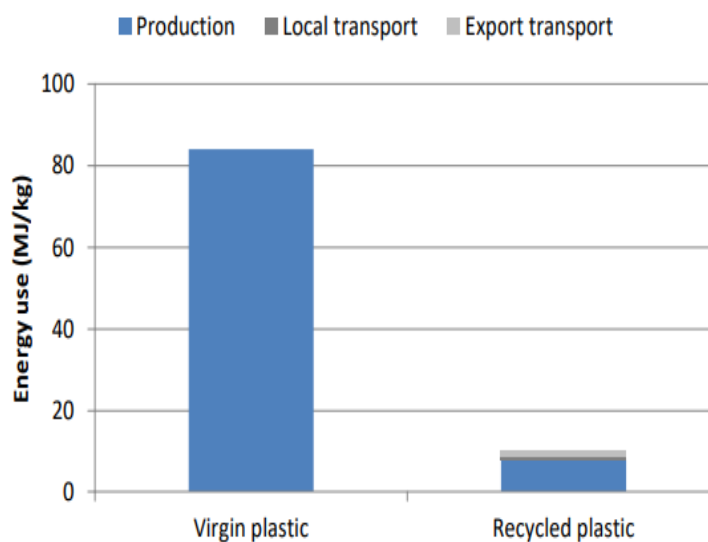


Figure 5: Relative energy intensity of virgin and recycled plastics production

Source: Wong, C. (2009)

Secondly, production cost is optimized through redesigning packaging. Unilever Vietnam's innovation of packaging designs can prolong product life cycle with multiple usage, simplification, and light weight. The product package is reusable, recyclable, compostable, and more convenient for the transportation process. Therefore, Unilever Vietnam can waste fewer packaging materials, reducing the demand for new input materials. This can lead to substantial financial savings in raw material costs, especially in the current context when customer demand is high and there are fluctuations in material prices.

b. Creating green investment opportunities

In Vietnam, Unilever's CSC initiatives, such as plastic waste reduction, material recovery, and recycled packaging, have directly strengthened the company's ESG performance, especially its environmental pillar. Strong ESG results not only demonstrate Unilever Vietnam's progress toward its Net Zero 2050 commitment but also create opportunities to attract green investment from the government and international partners.

4.3.2. Challenges

One of the most challenging problems for Unilever Vietnam is that waste management at source remains inconsistent and uncoordinated, which impedes the implication of circular practices. The inconsistency of waste management systems is reflected in the following aspects:

a. Lack of standard policy framework

Although Vietnam has begun incorporating CE principles into national regulations, such as in Decree No. 08/2022/ND-CP, these policies remain general and lack detailed guidelines for implementation. In particular, Vietnam still does not have a unified, mandatory national framework for waste segregation at source. As a result, waste classification practices vary widely across provinces, and neither households nor waste collectors follow consistent standards. This policy gap creates major challenges for Unilever Vietnam. Without a standardised system, recyclable materials are often mixed with general waste, reducing both the quantity and quality of inputs needed for recycling. It also becomes difficult for the company to build a harmonised CSC across regions, as collection systems, local regulations, and infrastructure differ significantly.

b. Low public awareness

People have little knowledge and low habits of collecting and classifying plastic waste. It is a serious challenge for Unilever Vietnam because public participation is important for PCR collection to conduct other stages in the circular model. Although Unilever Vietnam launched campaigns to educate the community, it is hard to change the habits of a large number of people in the short term. Through cooperation with URENCO, VietCycle, and Duy Tan, Unilever

Vietnam launched a waste collection program in Hanoi. The program resulted in the collection of 7,500 tons of recyclable waste, of which up to 6,500 tons of plastic waste. However, this figure is modest compared to the 1.8 million tons of plastic waste Vietnam discharges into the environment each year (Forbes VietNam, 2022)

c. Low infrastructure

Unilever Vietnam's strategy and campaign are conducted mostly in specific large areas such as Ho Chi Minh City and Ha Noi. However, a standardized waste-segregation system requires investment in classified bins and colour labels, specialized collection vehicles, and transfer stations. Many local and rural authorities have limited financial budgets and resources to implement waste collection campaigns, which can cause a lack of uniformity between areas and minimize the quality of collected and classified plastic wastes.

5. Recommendations for Enhancing Circular Supply Chain in Vietnam's FMCG Industry

5.1. Policy Recommendations for Government

5.1.1. In the short-term

a. Improve waste sorting guidelines

Pursuant to Clause 1 (Article 75) and Clause 7 (Article 79) of the Law on Environmental Protection 2020, the classification of domestic solid waste at the source is mandatory. Accordingly, households and individuals must implement waste sorting from 1st January 2025. Despite the law setting a deadline, many local collection systems still mix different types of waste, making recycling difficult. Moreover, infrastructure has not kept pace with policy: many areas still rely on handcarts instead of modern collection vehicles, and suitable waste collection points are lacking, causing traffic obstruction, odors, and visual pollution. As a result, waste sorting is often perceived as symbolic rather than effective. The MONRE should issue mandatory standards for specialized collection vehicles, separate collection schedules for recyclable waste, and detailed guidelines on waste classification for households and businesses. This would help companies ensure that recovered materials meet quality standards for reintegration into the CSC.

b. Increase business capacity

Technical support: Although Articles 75 of the Law on Environmental Protection 2020 and Articles 138, 139, 140, and 141 of Decree 08/2022/NĐ-CP establish the principles and encourage the adoption of eco-design and resource-efficient production, the current legal framework lacks specific technical standards and actionable guidelines. Therefore, the government can provide training and guidance to help businesses adopt eco-design and optimize packaging. This includes clear instructions on using recyclable or single-material packaging and reducing multi-layer plastics, as well as workshops, courses, and consultations to strengthen operational capacity. Once these measures are in place, further support can focus

on technology innovation, such as investing in waste sorting equipment and more efficient production lines.

Financial support: Recyclers can receive funding from the Environment Protection Fund (EPF), which collects EPR contributions from producers. However, practical implementation faces significant hurdles. The proposed recycling cost norms (Fs) have been criticized for lacking alignment with actual market costs and imposing substantial administrative burdens (VCCI, 2023a). This discrepancy creates uncertainty for businesses planning their compliance strategies and hinders the efficient flow of financial support to recyclers. Implementing a "Clearing House" model, similar to those used in Europe, could address this gap. This independent body, composed of government and industry representatives, would manage and distribute EPR contributions transparently, monitor compliance, and publish audited reports on fund usage and recycling outcomes.

c. Promote green awareness among the public

The government should implement targeted communication campaigns that educate the public, especially Gen Z, on waste separation, reuse, and recycling practices. In line with Article 142 of the Law on Environmental Protection 2020, these campaigns should be delivered through school programs, social media initiatives, and community workshops to promote practical, everyday circular behaviors and support compliance with source-segregation requirements. Additionally, eco-labeling schemes should be expanded to clearly identify products made with recycled materials or designed for recyclability, helping consumers make informed choices.

5.1.2. In the long-term

a. Eco-design fee mechanism

Currently, under Decree 08/2022/ND-CP, contributions to the EPF are calculated primarily based on packaging volume, without reflecting recyclability or environmental impact. Although Article 79 allows PROs to propose recycling cost norms (Fs), the fee structure remains uniform, offering limited incentives for eco-design. Therefore, the government should introduce an eco-design fee mechanism (eco-modulation), in which easily recyclable, mono-material, or recycled-content packaging is subject to lower fees, while hard-to-recycle or multi-layered materials incur higher fees. To operationalize this mechanism, clear recyclability criteria, a national database on packaging materials, and transparent auditing procedures are needed. Moreover, a phased implementation approach is recommended. Similar to EU practices, Vietnam can start with basic fee differentiation and expand to more advanced criteria once data systems and enforcement capacity are stronger.

b. Develop an integrated collection and recycling infrastructure

Aligned with Vietnam's National Action Plan for Circular Economy (Decision 222/QĐ-TTg), which calls for improving waste collection, treatment, and recycling capacities

as part of the CE transition, Vietnam should develop an integrated collection and recycling infrastructure. To achieve this, several measures can be implemented. Firstly, investment is needed in recycling facilities with sufficient capacity, particularly for closed-loop materials, to ensure recovered materials can re-enter the production cycle instead of becoming waste. Secondly, an efficient collection, transfer, and recycling network is essential to reduce the risk of “mixed waste” and increase recovery rates. This includes equipping collection vehicles with separate compartments, establishing appropriate transfer points, and partnering with certified recyclers to ensure the quality of recovered materials. Regulatory authorities should also monitor recovery rates, contamination levels, and the processing capacity of recycling facilities regularly, adjusting vehicles, processes, and workforce training as needed. Finally, a national digital database on waste and recycling should be developed to track the flow of materials from collection to recycling. Digitalizing this data and making it publicly accessible allows businesses to report ESG performance and provides evidence-based insights for policy adjustments.

5.2. Recommendations for Businesses

Step 1: Plan and assess the current supply chain

To ensure a seamless transition to a circular model, businesses might commence by gaining a comprehensive understanding of their product and packaging lifecycles. The key first step is to conduct a material flow analysis, which maps the movement of resources from raw material input to post-consumer disposal. This allows firms to identify critical "leakage points" in the current system. Based on these findings, companies should prioritize interventions in areas that can deliver the highest circular impact. Finally, businesses should set strategic 3 - 5 year targets tailored to their priorities and capabilities, selecting objectives such as increasing recycling rates, minimizing virgin packaging usage, optimizing EPR fees, or lowering carbon emissions, to guide subsequent design and operational decisions.

Step 2: Design for circularity

At this step, businesses focus on reducing waste generation from the beginning by redesigning products and packaging. Specifically, products should shift to mono-material designs, eliminating hard-to-recycle components to simplify post-consumer processing. Packaging should be lightweight to reduce material use and lower EPR fees. At the same time, they should design packaging that is easy to collect, sort, and recycle, while prioritizing the use of recycled materials such as PCR or rPET whenever possible.

Step 3: Optimize manufacturing

The scope of circularity must extend beyond post-consumer waste to include pre-consumer (production) waste through the implementation of Industrial Symbiosis. Within industrial zones, companies should stop treating production by-products as waste. Instead, they should partner with neighboring factories to utilize these by-products as input materials.

Moreover, companies should adopt clean energy solutions and resource-efficient technologies within their production lines to reduce emissions and material waste.

Step 4: Build a circular ecosystem

A CSC cannot function well if a company acts alone. Businesses should establish long-term partnerships with recyclers, waste collectors, and treatment facilities to ensure recyclable input materials and coordinate with local authorities or intermediary organizations to implement post-consumer product take-back programs. Furthermore, companies should set circularity standards across their value chain, such as supplier codes, to ensure all partners align with their sustainability and recycling objectives.

Step 5: Enhance collection from consumers

To scale beyond traditional “exchange trash for gifts” campaigns, businesses can adopt digital solutions such as mobile apps and QR codes to integrate informal waste collectors. Households pre-sort waste and schedule collections via the app, while collectors scan QR codes, weigh the waste, and input data directly into the system. This digital ecosystem can enhance transparency, provide audit-ready records with timestamps, GPS, and material volumes, and addresses EPR compliance by converting informal “grey market” activities into verifiable transactions.

Step 6: Monitor, measure, and improve

Companies should establish a material lifecycle tracking system using Blockchain or Cloud-based technologies to monitor accurately. This system enables periodic reporting on emissions, recycling rates, collection rates while assessing performance annually and adjusting strategies according to new policies. This approach ensures reliable data for ESG reporting and supports access to Green Credit packages and favorable financing terms.

6. Conclusion

This paper has examined the level of CSC adoption within Vietnam’s FMCG industry, identifying both the drivers that encourage the transition and the barriers that hinder large-scale implementation. The analysis shows that although several companies have begun integrating circular practices, the overall level of adoption remains at a preliminary to intermediate stage, with multinational and foreign-invested firms taking the lead.

Using Unilever Vietnam as a case study, the research also demonstrated how a leading FMCG company can embed circular principles across its supply chain. Unilever Vietnam has incorporated sustainable packaging design, responsible sourcing, low-carbon manufacturing technologies, alongside consumer-engagement programmes and a closed-loop plastic recycling system with the PPC model. Nonetheless, the study acknowledges certain limitations, such as the lack of publicly available data on distribution-stage activities, which suggests an area for future research.

Based on these findings, the research recommends that the government strengthen standards, enforcement and provide financial and technical support, while promoting public awareness and eco-design policies. FMCG companies should follow a structured roadmap covering material assessment, circular product design, efficient manufacturing, collaborative ecosystems, digital-enabled collection, and monitoring. Ultimately, close collaboration among government, businesses, recyclers, and consumers is key to building a resilient and sustainable circular ecosystem

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