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ARTICLES

Enhancing the Roles of Vietnam Customs in Fostering the Circular Economy

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The transition to a Circular Economy (CE) plays a crucial role in advancing many of the United Nations Sustainable Development Goals (UN SDGs). Like numerous other nations, Vietnam has embraced initiatives to promote a Green and CE as part of its commitment to the UN's sustainable development agenda. These efforts focus on extending product life cycles, enhancing the efficiency of natural resource utilisation and minimising waste. In this context, this paper describes a comprehensive review of the literature on CE and evaluates the current role of Vietnam Customs, applying the SWOT (Strengths, Weaknesses, Opportunities, Threats) model to identify strategic opportunities for Vietnam Customs to strengthen its control functions and facilitate the transition to a CE. The paper concludes with recommendations for Vietnam Customs to enhance its effectiveness in supporting CE initiatives and fulfilling its responsibilities in promoting sustainable trade practices aligned with multilateral and bilateral commitments.

1. Introduction

There are many definitions of a Circular Economy (CE). A common understanding of CE includes 'designing out waste and pollution, keeping products in use for as long as possible, and integrating with natural systems' (Barrie & Schröder, 2022). According to the Ellen MacArthur Foundation (n.d.), a leading international organisation in the CE field, CE is defined as:

> A framework of solutions to global challenges such as climate change, biodiversity loss, waste and pollution. It is based on three principles driven by design to eliminate waste and pollution, circulate products and materials (at the highest value), and regenerate natural systems.

While the linear economic model focuses on resource extraction, production and consumption without effective waste management, CE emphasises material management and reuse. It promotes a closed-loop system of production, consumption and recycling to minimise waste generation throughout the production cycle (World Customs Organization [WCO], 2023a).

According to Lacy and Rutqvist (2015), implementing the CE model offers significant financial and economic benefits to both society and businesses and CE could generate global economic benefits of USD4–5 billion by 2030. These advantages arise from increased input fuel efficiency, reduced post-production waste, enhanced environmental protection and the mitigation of greenhouse gas emissions. According to the Ellen MacArthur Foundation (n.d.), CE models have been adopted in various forms. One example is the 3R model, which follows a straightforward approach involving three key actions: Reduce (minimising resource consumption), Reuse (extending the life of products and resources) and Recycle (facilitating resource recovery and circulation). The 6R+ model adopts a more comprehensive approach, encompassing the following principles: Rethink and Redesign; Refuse; Reduce; Reuse; Remain and Repair; and Recycle (Ellen MacArthur Foundation, n.d.).

The transition to CE plays a significant role in advancing several United Nations Sustainable Development Goals (UN SDGs; Ogunmakinde et al., 2022). In recent years, numerous countries and international organisations have launched initiatives to promote the green economy and the CE, aiming to align with the UN's sustainability agenda. For instance, the European Union's European Green Deal includes a Circular Economy Action Plan (CEAP), while China has adopted a comprehensive national CE strategy (Barrie & Schröder, 2022). Additionally, the WCO conducts an annual global operation against waste, known as DEMETER (WCO, 2019), and has supported the Association of Southeast Asian Nations (ASEAN) Member States in implementing a project to enhance their capacity to enforce the revised *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention)* (United Nations Environment Programme [UNEP], 1989), with a specific focus on plastic waste (WCO, 2023b).

The study of the CE is an emerging and evolving field for Vietnam Customs. By reviewing relevant literature, theoretical foundations, the current legal framework and existing management practices in Vietnam, this paper applies the SWOT (Strengths, Weaknesses, Opportunities, Threats) model to identify strategic opportunities for Vietnam Customs to not only strengthen the current customs control functions but also to facilitate the transition to a CE.

In the *Customs Law No. 54/2014/QH13* (National Assembly of the Socialist Republic of Vietnam, 2014), the role of Vietnam Customs remains focused on revenue collection, customs control and trade statistics, with no specific provisions addressing its role in the CE. However, effective participation in the CE will require a holistic approach that balances customs control with the facilitation of CE-related goods. This is significantly more complex than linear goods due to environmental sensitivity in dealing with waste, refurbished goods and remanufactured products. Furthermore, the product lifecycle in the CE necessitates integrated customs controls and

supervision across borders, making extended collaboration in this area crucial (Rukanova et al., 2024). Nevertheless, Vietnam Customs is not yet prepared for this transition.

The paper concludes with recommendations aimed at improving Vietnam Customs' role in supporting CE initiatives. These strategies are essential for Vietnam Customs to not only manage the complexities of CE goods but also to play a proactive role in promoting sustainable trade facilitation aligned with bilateral and multilateral commitments, such as the Free Trade Agreement between the European Union (EU) and Vietnam (The European – Vietnam Free Trade Agreement and Investment Protection Agreement, [EVFTA]; European Commission, 2019).

2. Literature review

Research on the CE and its connection to customs functions is relatively new. Globally, numerous studies have explored various aspects of CE across different fields. For example, Barrie and Schröder (2022) conducted a comprehensive literature review examining the intersection of CE and trade. Their analysis, based on 69 articles sourced from Scopus, Web of Science and Google Scholar, covers both academic and grey literature. The review highlights the complexity of this topic and emphasises the need for further research. Barrie and Schröder (2022) identify both the adverse impacts and benefits of the global CE, underscoring significant knowledge gaps in managing CE-related trade flows. They also recommend the development and harmonisation of CE standards and updates to the WCO Harmonized System to better identify and distinguish waste and non-waste commodities in the CE.

A report titled *The Future of EU Customs in 2040* discusses the challenges posed by climate change and the sustainable transition for Customs (Ghiran et al., 2020). It analyses and forecasts the evolving role of European Customs in environmental protection, climate change mitigation and the shift towards a significantly growing sustainable economy. The report argues that customs administrations will be responsible for implementing the required activities and controls to support this transition, including enabling circular transformations and adopting business models aligned with the principles of the CE.

The WCO's *Customs Enforcement Handbook on the CE* (WCO, 2023a) addresses three key issues: (1), current trends in environmental laws and trade-related regulations pertinent to the CE, along with typical products associated with the CE; (2), an analysis of changes in customs enforcement and facilitation measures aimed at supporting the transition to the CE; and (3), guidance and best practices to assist customs authorities in navigating the transition process.

Additionally, Yamaguchi's (2022) report, *Securing Reverse Supply Chains for a Resource Efficient and Circular Economy*, emphasises the importance of circular supply chains in managing abundant resources and the economic complexities involved in their cross-border movement. It delves into the role

of reverse supply chains in advancing CE practices. These supply chains are essential for processes like recycling waste into secondary raw materials, as well as promoting reuse, repair, refurbishment and remanufacturing. The report highlights how reverse logistics helps to close material loops, enabling products to maintain their value and utility for longer periods.

An EU project on CE monitoring in the context of cross-border trade, conducted by Rukanova et al. (2024), conceptualises a monitoring mechanism for the CE, identifying challenges and proposing approaches for government and business collaboration. The paper highlights that the cross-border movement of CE goods complicates monitoring efforts, recommending the establishment of a global monitoring system, particularly through bilateral and multilateral free trade agreements (FTAs).

In Vietnam, several authors and scholars have researched and assessed the role of government agencies in the CE and analysed its overall impact. The following literature is relevant to the role of Vietnam Customs in the CE. Le et al.'s unpublished (2021) study, *Strengthening State Management of Customs in Implementing a green economy*, analyses the characteristics of the green economy and the role of the customs agency, including the collection of environmental protection taxes, import-export trade facilitation, customs control and trade statistics. However, these functions primarily reflect general customs responsibilities rather than being specifically tailored to CE goods, particularly in terms of trade facilitation measures applied for environmentally sensitive products (D. T. Le et al., 2021).

Research conducted by the Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE) and the United Nations Development Programme (UNDP) highlights that Vietnam was among the first ASEAN Member States to integrate the CE into its Environmental Protection Law and associated regulations (ISPONRE & UNDP, n.d.). Specifically, Article 142 of the *Law on Environmental Protection 2022* outlines regulations related to the CE, while Decree No. 08/2022/ND-CP provides detailed instructions on criteria, implementation methods and responsibilities for advancing the CE in Vietnam.

Furthermore, research by Lai and Pham (2023) on the theoretical basis of the CE, and referring to international experience, considers the development of a national action plan to implement the CE in Vietnam. The research outlines the viewpoints, goals, tasks and priority policy solutions for a national action plan to implement CE in accordance with international experience, general world trends, conditions and benefits, the socioeconomic situation and environmental protection goals of Vietnam.

In unpublished research, *Legislation on CE in Vietnam – current status and recommendations*, Le (2023) focuses on clarifying the theoretical and legal basis for the CE, assessing the legal status of CE in Vietnam, and proposing opinions and recommended solutions to continue enhancing the law on CE in the future.

Research on the CE in Vietnam generally offers a macro-level perspective, proposing solutions for its development in Vietnam. However, studies related to Customs have primarily focused on specific aspects of state management without fully incorporating the CE framework. There do not appear to be any studies that directly address the role of Vietnam Customs in the context of implementing and operating within the CE, neither is there any research proposing comprehensive solutions for establishing a CE framework within customs facilitation, control and inspection processes for import and export goods – even though this is a goal that Vietnam Customs is aiming to achieve, as directed in the *Customs Development Strategy To 2030*, issued under Decision 628/QD-TTg on 20 May 2022 by the Prime Minister of Vietnam (Prime Minister of the Socialist Republic of Vietnam, 2022b).

3. Objectives and limitations

This paper focuses on Vietnam Customs, specifically its role within the context of the CE, in alignment with Vietnam's *Customs Development Strategy To 2030*. The objective is to provide recommendations to enhance and upgrade the role of Vietnam Customs in fulfilling its responsibilities within the CE framework.

The paper explores customs management activities in the implementation of the CE, aligned with government orientations for CE development through to 2030. However, this paper is focused on the existing legal framework and available data from Vietnam Customs from 2018 to 2023, with a primary focus on recycled materials. This focus stems from the limitations of the current customs tariff system, which does not differentiate between linear and CE goods such as refurbished, remanufactured and reused products (WCO, 2023a).

The methods used include a comprehensive review of the literature, the theoretical foundations related to the topic and current customs management practices. The paper proposes solutions to strengthen the role and position of Vietnam Customs within the CE framework by 2030. SWOT strategies were also used to provide recommendations to Vietnam Customs to navigate the transition process.

Several analytical techniques were used, including comprehensive analysis, comparison and contrast and SWOT analysis, to formulate strategies for Vietnam Customs in adapting its roles to support the CE and promote sustainable trade practices. This approach is particularly important given Vietnam's multilateral and bilateral commitments, such as the EVFTA.

4. Roles of Customs in the Circular Economy

According to the WCO's *Customs Law Enforcement Handbook on the CE* (The Handbook; WCO, 2023a), achieving the goal of waste reduction involves circulating, trading and transporting circular goods – such as recyclable materials, scrap, used goods and refurbished products – under strict environmental conditions following Multilateral Environmental Agreements (MEAs), most notably the *Basel Convention* (UNEP, 1989).

The Handbook highlights that CE policies adopted by countries increasingly generate cross-border environmental implications, particularly through establishing product standards for imports and implementing Extended Producer Responsibility (EPR) schemes that hold producers accountable for end-of-life management of their products and packaging (WCO, 2023a). In this context, Customs plays a pivotal role in ensuring compliance with the environmental commitments related to the trade and cross-border transportation of goods.

Figure 1 illustrates the flow of goods through various stages in both the Linear Economy and the CE, from raw materials to intermediate and final products.

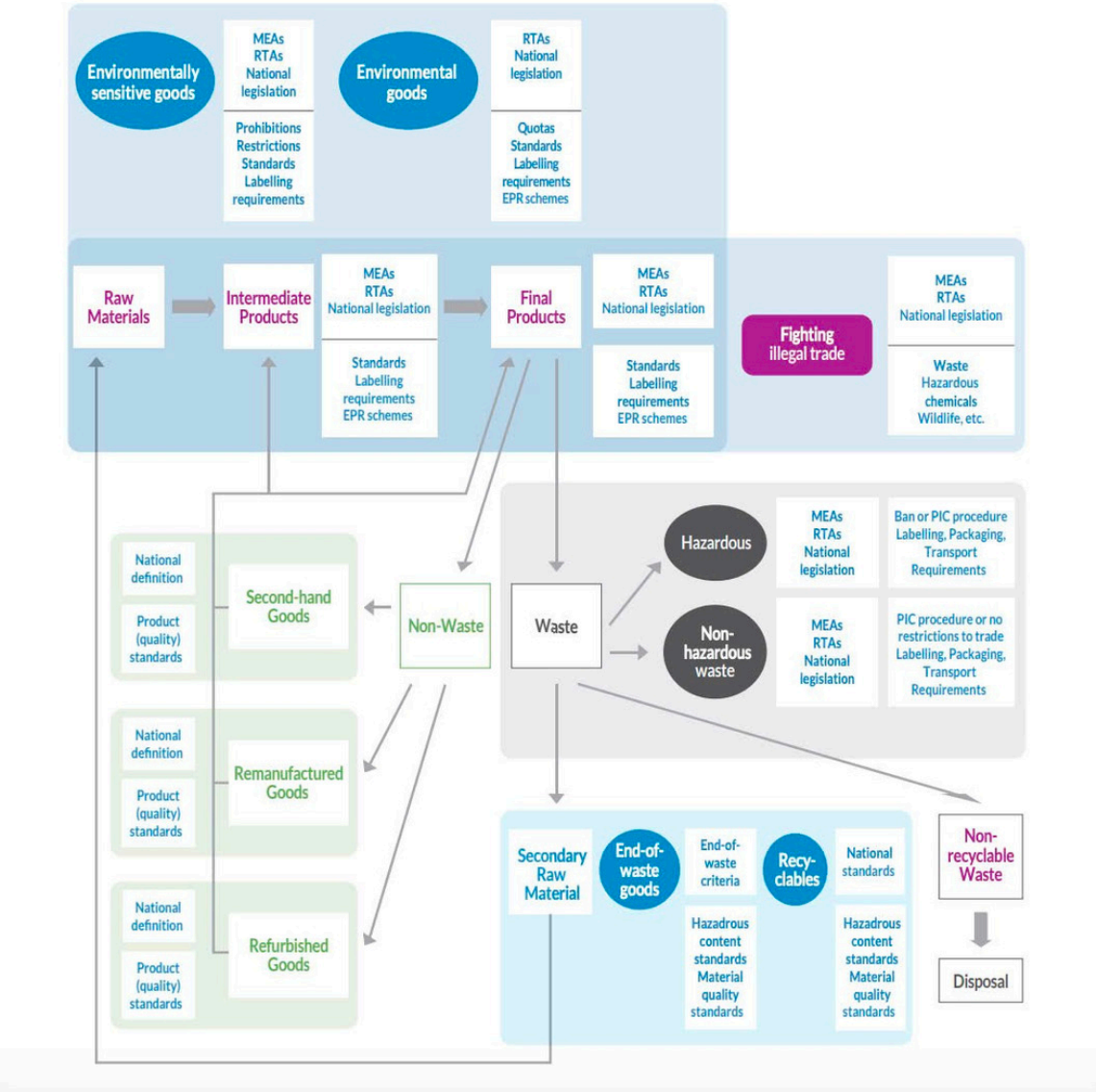

Figure 1. Different stages of the product life cycle and related measures contributing to CE goals

Note. MEAs, Multilateral Environmental Agreements; RTAs, Regional Trade Agreements; EPR, Extended Producer Responsibility; PIC, Prior Informed Consent.

Source: WCO, 2023, p. 44, reproduced with permission.

As depicted in Figure 1, the CE allows final products to enter a new life cycle in the following forms: (i), waste, as secondary raw materials, where scrap can be recycled and used as raw materials (e.g. plastic scrap, iron, steel, copper, paper, e-waste); and (ii), non-waste, where second-hand, remanufactured or refurbished goods, such as used cars, machinery, clothing, shoes and electronic equipment, are reintroduced into the production cycle as intermediate products.

Customs administrations act as gatekeepers with responsibilities that include control, duty collection, customs clearance and customs statistics, as stipulated by relevant laws when goods cross borders. Additionally, Customs cooperates with other government agencies in implementing MEAs and Regional Trade Agreements (RTAs) (WCO, 2023a).

Barrie and Schröder (2022) emphasise the critical role of FTAs in fostering cooperation and mutually beneficial actions to accelerate the transition to the CE. For example, the EVFTA outlines a set of commitments on sustainable development. Both the EU and Vietnam have agreed to implement MEAs related to climate change, including the *1992 United Nations Framework Convention on Climate Change* (UN, 1992b), the *1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change* (UN, 1998) and the *2015 Paris Agreement* (UN, 2015). The EVFTA obliges both parties to actively cooperate in promoting the transition to a low-emission, climate-resilient economy, consistent with the *2015 Paris Agreement*. Additionally, the two Parties have committed to advancing domestic and international carbon markets.

The EU and Vietnam aim to ensure that their respective customs legislation and procedures promote trade facilitation while maintaining effective customs control. They have agreed that their legislation will be non-discriminatory, and customs procedures will be simplified, transparent and based on modern methods and controls to combat fraud and support legitimate trade. Furthermore, both Parties have pledged to provide greater facilitation for businesses with higher levels of compliance and to regularly review procedures and regulations to expedite the release and clearance of goods wherever possible. This cooperative approach aligns customs management practices with sustainable trade and CE principles while also promoting economic growth under the EVFTA (Vietnam Chamber of Commerce and Industry [VCCI], 2023).

To meet environmental protection requirements and ensure sustainable development under the EVFTA, transitioning from a linear economy to the CE is essential. This shift will help Vietnamese enterprises conserve resources, reduce environmental emissions and adopt sustainable, eco-friendly practices in their production and business operations. Fulfilling these environmental commitments under the EVFTA is key to maximising the value and benefits Vietnamese enterprises can gain from the agreement's economic

opportunities. By embracing CE standards outlined in the EVFTA, key industries such as fisheries, manufacturing and agriculture can enhance their access to the EU market (VCCI, 2017).

In the context of the CE, the regulation and movement of CE goods have become more complex, making the role of Customs more challenging in balancing trade facilitation and control. According to the WCO (2023a), challenges faced by Customs are due to the early stage of development, specifically stemming from the ambiguity of broad concepts and the unpredictable nature of their evolution. Compared to the linear economy, Customs now faces increased complexity in managing these goods due to the need for tracking, recycling and compliance with multiple international and national sustainability standards (WCO, 2023a).

5. SWOT assessment of factors

From 2020 to 2023, the WCO implemented a project to support eight customs administrations of ASEAN Member States enhance their capacity to enforce the amended *Basel Convention*, with a particular focus on managing plastic waste (WCO, 2021). This project acknowledged that since 2018, China, previously the largest importer of plastic waste, has abruptly halted all plastic waste imports. This shift resulted in redirecting plastic waste shipments to neighbouring countries, including Vietnam (WCO, 2021).

One of the key outcomes of the project was the creation of the *Self-assessment tool Basel Convention – Plastic Waste* document (WCO, 2022), which Vietnam Customs and other participating members used to evaluate their progress in implementing the *Basel Convention* and managing the transboundary movement of plastic waste. We applied this self-assessment tool alongside a SWOT analysis to assess the position of Vietnam Customs in promoting the CE. This analysis helped identify areas where Vietnam Customs could enhance its role, leading to recommendations for its key responsibilities and strategies up to 2030, with a vision extending to 2045. Some key points from the SWOT analysis approved by the Director General of Vietnam Customs (2024a) in Decision 1573/QD-TCHQ, dated 28 June 2024, which recognised the outcomes of the research project on *Roles and Tasks of Vietnam Customs in the Context of Implementing the Circular Economy until 2030, with a Vision to 2045*, are outlined below.

5.1. Strengths

Firstly, Vietnam has established a robust CE development strategy that clarifies the role of Vietnam Customs in this framework. The *National Environmental Protection Strategy to 2030*, issued under Decision 450/QD-TTg on 13 April 2022 (Prime Minister of the Socialist Republic of Vietnam, 2022a), outlines a vision for achieving high environmental quality by 2050, with a society in harmony with nature. This strategy emphasises the development of a CE and an eco-, green and low-carbon economy, with the goal of achieving carbon neutrality by 2050.

The *Customs Development Strategy to 2030* outlines key objectives for Vietnam Customs in aligning with sustainable development and the CE model. The strategy emphasises the need for a green Customs, setting a clear mandate for customs operations to promote and support trade activities that align with sustainability principles.

This provides the orientation and legal foundation for Vietnam Customs to fulfil its role and responsibilities in promoting the green economy and the CE. Through the *Customs Development Strategy to 2030* and the *National Environmental Protection Strategy to 2030*, Vietnam Customs is empowered to enforce environmental regulations, encourage sustainable trade practices and support the transition to a CE. These frameworks guide customs operations to ensure compliance with green customs principles, fostering environmentally friendly trade activities while adhering to Vietnam's commitments to international treaties on environmental protection and sustainable development.

Secondly, Vietnam's legal framework aligns with its international commitments on the environment and the CE. According to unpublished research by Le et al. (2021), Vietnam Customs has actively proposed establishing the necessary legal foundations for bilateral customs cooperation in key management areas, laying the groundwork for the government and the ministries to sign numerous international agreements and treaties related to the CE, such as the following key agreements:

- the *Basel Convention*, which governs the transboundary movement and management of hazardous waste
- the *Convention on Biological Diversity (CBD),* which promotes the sustainable use of biological resources and the conservation of biodiversity (UN, 1992a)
- the *Cartagena Protocol on Biosafety*, an international agreement under the CBD that regulates the safe handling, transfer and use of living modified organisms resulting from biotechnology (UN, 2000)
- the *Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES),* which regulates the global trade in endangered species to prevent their exploitation and extinction (CITES, 1973)
- the *Stockholm Convention on Persistent Organic Pollutants (POPs),* aimed at reducing and eliminating the release of hazardous chemicals that threaten human health and the environment (UNEP, 2001).

These agreements not only reinforce Vietnam's commitment to environmental protection but also ensure that its customs procedures align with global standards for sustainable development and CE practices. By enhancing legal and international cooperation, Vietnam Customs should be better positioned to control the transboundary movement of environmentally sensitive goods and actively promote CE principles.

The Decree 08/2022/ND-CP dated 10 January 2022 (Government of the Socialist Republic of Vietnam, 2022), amended by Decree 05/2025/ND-CP, dated 6 January 2025 (Government of the Socialist Republic of Vietnam, 2025), issued by the Vietnam Government, guides Customs in verifying import licences, monitoring imported scrap and preventing hazardous waste imports. However, Vietnam Customs' role in managing CE trade remains limited to control functions, with no dedicated mechanism to facilitate cross-border CE trade flows.

Thirdly, Vietnam Customs has developed and implemented an automatic management system for imported scrap to enhance compliance management. This system includes various functions such as user management, updating information and transferring data to generate statistical reports. It serves as an effective tool for monitoring compliance, determining whether to allow container yard unloading, and facilitating scrap quota inspections.

The system, often referred to as E-scrap, has proven to be instrumental in managing the import of scrap materials. The main types of scrap imported into Vietnam between 2016 and 2023 included iron and steel scrap, paper scrap and plastic scrap (Table 1; Vietnam Customs, 2024b).

This automated system helps ensure that imported scrap meets environmental and regulatory standards, supporting the broader goals of sustainable development and effective waste management.

Table 1. Data on imported scrap into Vietnam from 2016 to 2023

Year	Iron and steel scrap (x 1000 ton)	Plastic scrap (x 1000 ton)	Paper scrap (x 1000 ton)
2016	3,895.5	245.8	641.3
2017	4,727.8	385.5	1,438.5
2018	5,741.5	381.8	2,063.2
2019	5,460.3	482.8	2,665.9
2020	6,300.5	620.7	3,050.6
2021	6,340.2	881.5	3,807.8
2022	4,008.5	456.6	3,089.5
2023	3,744.7	441.5	3,535.7
Total	**40,219**	**3,896.2**	**20,289.5**

Source: Vietnam Customs (2024b).

5.2. Weaknesses

Firstly, Vietnam Customs has not yet implemented integrated supply chain management in its risk management, inspection, supervision and control operations. A survey on the SAFE Framework of Standards to Secure and

Facilitate Global Trade (SAFE Framework) implementation reveals that Vietnam Customs has not yet integrated supply chain management into its clearance and management system (Hoai & Hoang, 2024). Although the *Customs Development Strategy to 2030* outlines this as a goal, the *Law on Customs No. 54/2014/QH13* does not specifically stipulate a mechanism for integrated supply chain management within customs procedures (National Assembly of the Socialist Republic of Vietnam, 2014). As a result, there are currently no provisions that allow for the comprehensive control of the circular supply chains, from the shipment's point of departure to its final destination. To effectively regulate circular trade, a clear legal framework should be established, ensuring that Customs, in collaboration with environmental and other regulatory agencies, can monitor and facilitate the movement of CE goods while preventing illicit trade flows (Rukanova et al., 2024; WCO, 2023a).

Secondly, Vietnam Customs lacks a risk management database specifically for CE goods. While some risk indicators have been developed for waste and wildlife trading, and transportation activities, no comprehensive database has been established for other goods relevant to the CE framework, such as remanufactured, refurbished or reused goods. Furthermore, the risk management system is not integrated or shared with other relevant agencies, such as the Environment Agency, due to data protection and security concerns. As a result, the management and oversight of goods related to the CE remain significantly limited.

Thirdly, Vietnam Customs lacks a comprehensive customs control process tailored to the CE framework. Goods subject to management and control within the CE are more diverse, including renewable energy products and environmentally sensitive goods specified in MEAs. However, Vietnam Customs has not yet established specific regulations or developed a database of violations related to these types of goods. This absence of a structured control process and comprehensive data limits the effectiveness of managing goods within the CE context.

5.3. Opportunities

There are several new opportunities to support Vietnam Customs in fulfilling its role within the CE framework. The first is the deployment of a smart customs system utilising 4.0 technology. Implementing a smart customs clearance system integrated with Industry 4.0 technologies like the Internet of Things (IoT) and Artificial Intelligence (AI) may significantly improve operations. These technologies enable real-time connectivity across the supply chain, enhancing the efficiency of big data analysis in risk management. This allows for more effective monitoring and control of environmentally sensitive goods, while also creating more favourable conditions for compliant enterprises by streamlining the customs process and reducing delays.

The second is to enhance the cooperation with government agencies and international organisations in managing the CE. Vietnam Customs, as the coordinating agency for the National Committee for Trade Facilitation (NCTF) and the Steering Committee of Enforcement Agencies 389, has a key opportunity to strengthen such collaboration. By establishing information exchange channels and signing memorandums of understanding (MoUs) in key professional fields, Vietnam Customs can enhance its alignment with CE principles. These efforts enable better data sharing on CE goods, facilitating accurate classification, risk assessment and regulatory compliance. MoUs with international partners help harmonise technical standards and streamline customs procedures, ensuring the smooth cross-border movement of CE goods.

5.4. Threats

Vietnam Customs faces several threats and challenges in managing the CE. One key challenge arises from the outcomes of the WCO's Asia-Pacific Plastic Waste Management (APPW) Project (WCO, 2021). A report on this project highlights the importance of harmonisation and mutual recognition of technical standards and customs procedures. The CE requires countries, particularly within regions, to enhance cooperation to harmonise and simplify technical standards and customs procedures, as recommended by the WCO (2023b). This harmonisation is crucial for promoting mutual recognition and facilitating trade, which in turn helps reduce recycling costs by minimising regulatory discrepancies, streamlining cross-border movement of recyclable materials, and encouraging economies of scale in recycling industries. In addition, by ensuring that waste is properly classified, tracked and processed under standardised regulations, mutual recognition prevents mismanagement and illegal dumping, reducing the risk of waste being disposed of in landfills or oceans.

However, the World Trade Organization (WTO) has reported an increase in technical barriers to trade, such as Sanitary and Phytosanitary (SPS) measures and Technical Barriers to Trade (TBT), as countries adopt higher environmental protection standards. These barriers, along with other non-tariff barriers like licences and quotas, create additional challenges to implementation.

Regarding customs procedures, there is a need to harmonise and mutually recognise the mechanisms for authorised traders through Authorized Economic Operator (AEO) Mutual Recognition Agreements/Arrangements (MRAs). This would ensure the security and safety of supply chains and facilitate AEOs, allowing them to comply with CE principles more effectively. Such harmonisation is critical to promoting CE-compliant businesses by ensuring that customs procedures are aligned with environmental sustainability while maintaining trade efficiency.

In addition, customs officers need to have a comprehensive understanding of the CE and the Prior Informed Consent (PIC) procedures. To effectively control the trade of circulating goods while facilitating compliance for enterprises, customs officers must be well-versed in several areas, such as:

- technical standards related to refurbished goods, recycling processes and the identification of hazardous waste
- knowledge of the roles and responsibilities of Customs in enforcing MEAs, which often govern the transboundary movement of environmentally sensitive goods
- familiarity with the PIC procedure, a key regulatory process under agreements like the *Basel Convention*, which requires the prior informed consent of importing countries before hazardous waste shipments can occur.

Such comprehensive knowledge is essential for customs officers to both strictly control trade and support enterprises engaged in CE-compliant activities, ensuring that they meet the necessary environmental and safety standards while facilitating smooth operations. Figure 2 visually represents the PIC process and its relevance to customs operations.

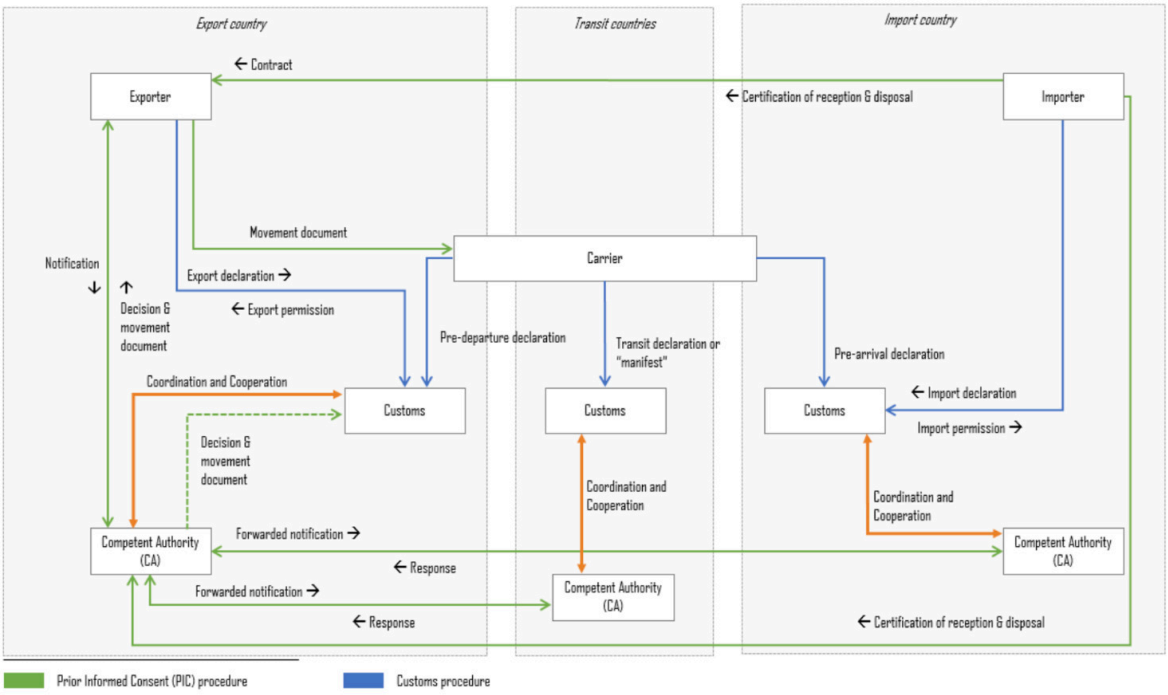

Figure 2. The PIC and customs procedures for transboundary movement of waste

Source: WCO, n.d., p. III/9. Reproduced with permission.

By leveraging its strengths, addressing weaknesses, seizing opportunities and mitigating threats, Vietnam Customs can enhance its effectiveness in managing CE trade flows. The SWOT analysis serves as a crucial tool for formulating strategic recommendations to reinforce Vietnam Customs' role in the CE.

6. Recommendations for Vietnam Customs

6.1. Upgrading the legal system

Vietnam Customs should have explicit responsibilities in CE-related activities stipulated in legal documents. This includes responsibilities such as participating in import licensing councils and overseeing the PIC procedures for hazardous waste and other regulated goods.

It is recommended to develop processes, procedures and systems that enable Vietnam Customs to implement integrated supply chain management. Key measures include establishing robust data-sharing mechanisms among stakeholders, particularly trusted traders, to enhance transparency, efficiency and coordinated border management (WCO, 2018). Furthermore, adopting advanced automated risk assessment tools and requiring advance cargo reports will improve pre-arrival risk mitigation and facilitate customs control as recommended by the WCO (2018). These efforts will streamline operations, strengthen supply chain security and align Vietnam Customs with global best practices on CE management (Hoai & Hoang, 2024).

6.2. Development of customs management processes

Currently, Vietnam Customs does not have a clearly defined role in the management of the CE. The existing decrees and circulars need to be more specific to clearly establish the role and position of Customs within the CE. In addition, Vietnam Customs should develop comprehensive management processes that encompass control over commodity policies and tax policies. These processes should be designed to effectively manage the circular flow of goods by implementing risk-based control measures, digital tracking systems and streamlined licensing procedures (Rukanova et al., 2024).

6.3. Modernisation and application of information technology

To enhance customs management within the CE, Vietnam Customs should promote digital and smart customs systems, leveraging information technology and improving customs statistics processes. These efforts are crucial for modernising customs clearance, management and supervision, and for developing an efficient risk management system that integrates CE principles into customs operations, ensuring a balanced approach between trade facilitation and regulatory compliance. This involves identifying and categorising CE goods to distinguish them from waste and illicit shipments, enhancing risk assessment tools to detect violations like illegal waste trafficking or misdeclared consignments, and implementing targeted inspections based on data-driven risk profiling (WCO, 2023a).

To support CE management in customs operations, it is essential to quickly establish a comprehensive system of processes and software that facilitates the electronic exchange of data on CE goods through the National Single Window and ASEAN Single Window platforms. This system should also automate the collection of statistics and ensure accurate, complete periodic reporting to strengthen data-driven decision-making and compliance monitoring.

6.4. Actively applying modern technology and enhancing partnerships

Vietnam Customs should actively apply modern technologies and foster partnerships with stakeholders to improve the efficiency and diversity of information collection for risk management and customs inspection and control. Leveraging advanced technologies such as big data analytics, IoT and AI can enhance real-time monitoring and decision-making processes.

Additionally, establishing an information-sharing mechanism with relevant ministries and sectors will facilitate more effective compliance management and risk assessment, ensuring better coordination in monitoring goods and enforcing regulations within the CE framework. This will support a more integrated and responsive customs system.

6.5. Strengthening international cooperation

Vietnam Customs should strengthen its engagement in international forums, particularly by participating in the WTO's Environment and Trade Committee and the WCO's Enforcement Committee, to advance the harmonisation of technical standards for goods within the CE. This will help maximise competitive advantages and facilitate the circulation and reintegration of reused goods into the production cycle.

Vietnam should also leverage international resources to support capacity building for customs officers and enterprises, raising awareness and skills, particularly in handling toxic waste and other CE-related goods. Additionally, strengthening the signing of AEO MRAs will create optimal conditions for these operators, enhancing their competitive advantages and expanding export markets by ensuring smoother and more efficient trade processes.

7. Conclusion

The study of the CE is a new and evolving field for Vietnam Customs. In the context of the global shift towards sustainable development, balancing socioeconomic and environmental factors is increasingly important. With the Vietnamese government's orientation towards developing the green economy and CE, this paper highlights the core issues of the CE and its relationship with the roles and responsibilities of Vietnam Customs.

Based on a SWOT analysis, the paper proposes several strategies and actions for Vietnam Customs aimed at improving the legal system and customs processes to support the CE, providing a balance between customs control and trade facilitation of the CE, modernising IT systems to leverage Industry 4.0 technologies for better management, enhancing the efficiency

of information collection and risk management, strengthening cooperation with ministries, sectors, partner countries, and international organisations to harmonise technical standards, and promoting the signing of AEO MRAs to improve security and safety control while facilitating the legal circular supply chain.

These efforts will better equip Vietnam Customs to take a proactive role in fostering the CE while supporting sustainable trade practices in alignment with bilateral and multilateral commitments.

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