



Research on Green Supply Chain Innovation Based on Tripartite Coordination Mechanism

*Yanru Li

Chengdu Polytechnic, Chengdu, Sichuan, 610041, China

*E-mail: Liyanru102@126.com

Abstract. Green supply chain management has become a hot issue in current research, because it conforms to the requirements of the times, particularly considers environmental issues, and promotes the harmonious development of economy and environment. The correct decision-making of the government, core enterprises and consumers is the basis for the construction and smooth operation of green supply chain. This paper is a study based on the innovative theory of green supply chain. Firstly, it expounds the background of developing green supply chain, and then discusses from three dimensions: the government's regulatory mechanism, the green supply chain implementation path of core enterprises, and the green consumption mode of consumers.

Keywords: Green Supply Chain; Coordination Mechanism; Innovation

1 INTRODUCTION

Since 18th meeting of China, government attach great importance to the development of China's supply chain and have repeatedly proposed to promote supply chain innovation and form a complete and efficient industrial supply chain. Such as "Made in China 2025" /"Guiding Opinions of the General Office of the State Council on Actively Promoting Supply Chain Innovation and Application"/"Thirteenth Five-Year Plan for Ecological Environment Protection" and the "Guidelines for Green Supply Chain Management of Green Manufacturing Enterprises" (GB/T33635-2017). It can be seen that the country has now raised green development to a new strategic height.

With the deepening of understanding of environmental protection and sustainable development, the expectation and voice of human beings to develop green economy are becoming higher and higher [1]. The theoretical and applied research on green supply chain at home and abroad is also constantly developing and innovating. To achieve sustainable development and truly practice green supply chain, it requires the joint participation and active cooperation of the government, enterprises and consumers, and the establishment of a green supply chain innovation system for the whole society, which should be effectively implemented. This paper is a study based on the innovative theory of green supply chain. Firstly, it expounds the background of developing green supply chain, and then discusses from three dimensions: the govern-

ment's regulatory mechanism, the green supply chain implementation path of core enterprises, and the green consumption mode of consumers.

2 INNOVATION OF THE TRIPARTITE COORDINATION MECHANISM OF GREEN SUPPLY CHAIN

The government should play a leading role in the innovation and application of green supply chain. The value of green supply chain is reflected on the basis of the unity of economic benefits, social benefits and environmental benefits. However, due to the high initial investment and risk, the government should become the leading force in the development of green supply chain [2]; enterprises should play a leading role in the green supply chain revolution. Enterprises should recognize that green supply chain is the general trend of the development of the times, which is the social responsibility that enterprises should bear, and also a rare opportunity for enterprise development. Therefore, enterprises should carry out the innovation of supply chain system and organization, form a green supply chain from development, production, marketing, processing, recycling, and also strive to cultivate green technology research and development team, establish and improve the green innovation talent incentive mechanism, increase the investment in green technology research and development; the transformation of public consumption mode is an important driving force for the development of green supply chain. With the strengthening of people's awareness of environmental protection and the deepening of their understanding of green consumption, green manufacturing has become the pursuit of enterprises, and green consumption has become the theme of consumers' life [3]. The relationship among government, enterprises and consumers is shown in Fig.1:

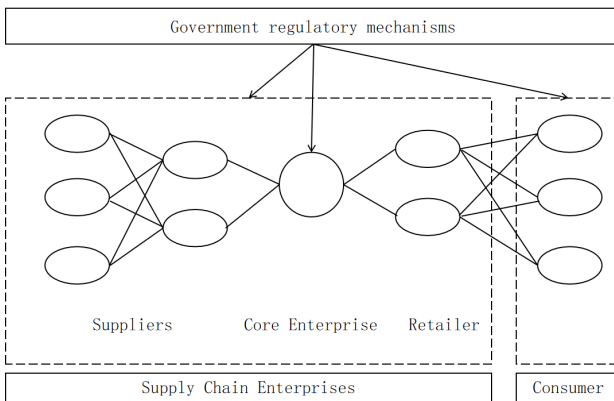


Fig. 1. Relationship among government, enterprises and consumers in green supply chain

As shown in Fig.1, the government manages the members of the green supply chain through direct environmental management and indirect environmental management. The government directly supervises core manufacturing enterprises and

consumers; for upstream and downstream enterprises in the supply chain, the government entrusts core enterprises to directly supervise them by using their influence in the supply chain. This can reduce the heavy workload of government departments while promoting the sustainable development ability of the economy and achieving a virtuous cycle of economic operation.

2.1 Government Regulatory Mechanism

The government plays a very important role in the development and innovation of green supply chains. The government plays an advocacy, support, supervision, and reward and punishment role in the implementation and management of green supply chains. With the transformation of government functions, the regulatory function of the government is obviously particularly important.

China currently does not have uniform legislation on green supply chains, and the government's guidance to enterprises is mainly reflected in the issuance of a series of policy guidelines. As early as 2016, the "Industrial Green Development Plan (2016-2020)" issued by the Ministry of Industry and Information Technology clearly stated that "taking the core enterprises of the supply chain as the starting point, carrying out pilot demonstrations, implementing green procurement, promoting the extension system of producer responsibility, and cultivating 100 green supply chain demonstration enterprises in information communication, automotive, home appliances, textile and other industries". In February 2021, the State Council issued the "Guiding Opinions on Accelerating the Establishment of a Sound Economic System of Green, Low-carbon and Recycling Development", which further emphasized the construction of green supply chains, encouraged enterprises to carry out green design, choose green materials, implement green procurement, create green manufacturing processes, promote green packaging, carry out green transportation, and do a good job in recycling and disposing of waste products, to achieve green and environmental protection throughout the product life cycle; and required the selection of about 100 highly motivated, socially influential, and driving enterprises to carry out green supply chain pilot projects, and explore the establishment of a green supply chain system. Industry associations are encouraged to improve the green level of the industry supply chain through the development of norms, advisory services, and industry self-discipline.

2.2 Implementation Path of Supply Chain Enterprises Under the Regulatory Mechanism

Under the supervision of the government, supply chain enterprises play a leading role and are the key to implementing a green supply chain. The basic framework of a green supply chain for enterprises is shown in Fig.2.

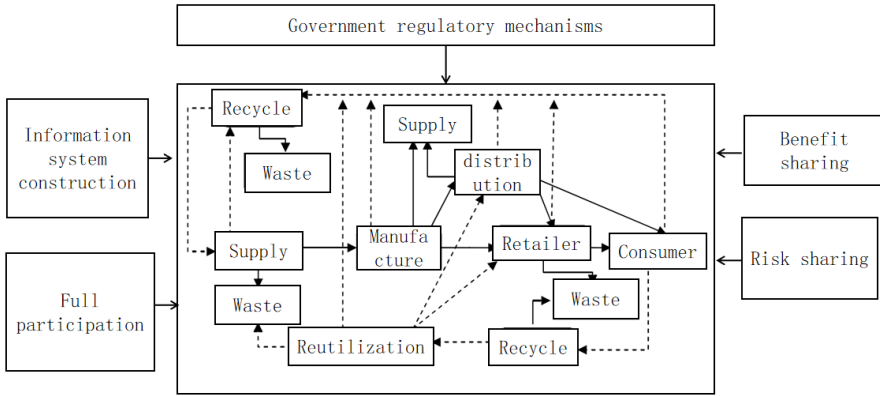


Fig. 2. Basic framework of enterprise green supply chain

The purpose of government regulatory policies is to maximize social welfare. What is the direction of supply chain enterprises' efforts under the government regulatory mechanism?

(1) Establishing rules. Core enterprises in the supply chain should first establish relevant management rules, requiring supply chain enterprises to implement specific environmental protection measures to meet relevant environmental protection goals, so that their environmental protection practices have rules to follow [4]. At the same time, it is necessary to ensure that the specific environmental protection goals and measures stipulated in the established rules and regulations should be as specific, quantifiable, and feasible as possible.

(2) Due diligence. Core enterprises can conduct due diligence on the environmental, health, safety, and other aspects of enterprises in the supply chain that may affect the supply relationship [5]. For problems identified during the due diligence process, they can request that they be rectified as soon as possible, and implement specific rectification requirements in the contract agreement, in order to improve the overall environmental protection level of the supply chain and form a closed-loop management.

(3) Hierarchical management. Based on the environmental compliance and supply importance of supply chain enterprises, core enterprises can conduct hierarchical management on supply chain enterprises, labeling enterprises with different levels of impact as "red", "yellow", and "green", and formulating corresponding management measures.

(4) Regular assessment. Core enterprises should continuously track the environmental protection status of supply chain enterprises according to environmental protection goals and regulations, conduct regular audits and assessments [6], and combine specific assessment conditions with reward and punishment systems to effectively implement and enforce the environmental protection system and corresponding reward and punishment systems of supply chain enterprises.

2.3 Innovative Green Consumption Model

Due to the increasing awareness of environmental protection, people are gradually paying attention to the impact of the products they use on the environment during use. Advocating a green lifestyle in terms of clothing, food, housing, transportation, and tourism, cultivating people's green consumption awareness, further expanding the green consumption market, and truly implementing a green supply chain.

3 CONCLUSION

The research of green supply chain will effectively play the dual roles of government and market. On the one hand, the Government should not only strengthen government green procurement and other behaviors, but also establish rules and regulations to provide institutional guarantees for the green supply chain, and ultimately transfer the pressure of environmental governance and the driving force of green development to every enterprise in the industrial chain. On the other hand, every enterprise in the green supply chain, whether it is a supplier or a purchaser, should fully fulfill its responsibility as the main body of environmental governance, achieve reasonable sharing of environmental costs, overall prevention and control of environmental risks, and strive for the support of consumers and the public, so as to obtain a more stable, long-term and sustainable market competitiveness.

ACKNOWLEDGMENTS

Sponsor:2023 National Logistics Teaching and Research Project for Universities and Vocational Colleges (No.: JZW2023246).

REFERENCES:

1. Li Y.N, Xu L. (2017) Research on the Relationship between Competitive Environment, Green Practice and Enterprise Performance [J]. *Science of Science and Management of Science and Technology*, 38: 44-54. <https://www-cnki-net>
2. Zhu J.F, Yu P.L, and Shi J.G. (2015) Research on the relationship between green technology innovation, environmental performance, economic performance, and government incentives and penalties [J]. *Forecasting*, 34: 61-66. <https://www-cnki-net>
3. Freije I, Ugarte JV. (2022) Role of supply chain integration in the product innovation capability of servitized manufacturing companies [J]. *Technovation*, 118: 385-404. <https://doi.org/10.1016/j.technovation.2020.102216>
4. Khanuja A. and Jain R.K. (2022) The mediating effect of supply chain flexibility on the relationship between supply chain integration and supply chain performance [J]. *Journal of Enterprise Information Management*, 35:1548-1569. <https://doi.org/10.1108/JEIM-11-2020-0449>
5. Liu C.M. (2011) Research on the Coordination Strategies of Enterprises, Governments, and Consumers in the Green Supply Chain [D]. Northeastern University. <https://www-cnki-net>

6. Irfan, M., Wang, M. and Akhtar, N. (2020) Enabling supply chain agility through process integration and supply flexibility: Evidence from the fashion industry [J]. *Asia Pacific Journal of Marketing and Logistics*, 32:519-547. <https://doi.org/10.1108/APJML-03-2019-0122>

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

