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CHINA'S NATIONAL SWORD POLICY REACTION TO SOUTHEAST ASIA'S WASTE TRADE AND THE TRANSITION TO A CIRCULAR ECONOMY

¹**Siti Norida Wahab & ²Fung You James Lim**

¹ Faculty of Business and Management, Universiti Teknologi MARA, 42300 Puncak Alam, Selangor, Malaysia.

²SMT Speed-Mark Forwarders, Bandar Bukit Tinggi, Klang Selangor, Malaysia

Corresponding author: sitinorida23@uitm.edu.my

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ABSTRACT

Waste trade, like those of other resources, has grown globally. The waste trade must be implemented in order to ensure environmental sustainability and the transition to a circular economy (CE). Waste trade, in the context of CE, serves as a basis for the development of circular business operations by facilitating end-of-life product management activities such as product return, reuse, recycling, and refurbishment. China is regarded as a global leader in recycling and solid waste disposal. Solid waste management is the process of reusing manufactured products to recover and reuse resources including plastics. However, the reassessment of the quality of traded recyclable materials has sparked a global waste governance dilemma. The goal of this study is to bring attention to the environmental consequences of plastic waste in a transition to a CE and the overview of China's national sword policy prohibition law. Using a qualitative approach, this study will analyse, assess, and formulate the practices of the waste trade that is now practised in the business. Various types of waste and how they cause emissions, waste trade and CE, China's national sword policy and the consequences of worldwide plastic trade on businesses and the environment will be discussed. Additionally, a few steps that should be addressed including appropriate waste management and public awareness are also discussed.

China's national sword policy is widely acknowledged to have a substantial effect on its neighbourhood countries including Malaysia, Vietnam, Thailand and Indonesia. This study concluded with a recommendation for how the developing countries could benefit from China's pathways.

Keywords: Sword policy, waste trade, circular economy, sustainable development

INTRODUCTION

China's rising power is well recognised as one of the utmost progressive countries in terms of global position. China's power has an impact on a multitude of international issues, including the economy, environment, culture and defence (Wang et al., 2020). As power grows, it becomes increasingly important to evaluate China's international policies. Diverse political legislatures and institutions formed by social interactions should be distinguished in foreign policy. The policy covers the individual needs and expectations, or a passion to acquire more about the laws and regulations that states and organisations have put in place. The establishment of political representative is the most fundamental shift in China's foreign policy development. Representatives from Beijing's policymaking organisations were also involved, both directly and indirectly. Foreign investors are also attracted to China since the procedures are considerably easier to follow (Hahladakis et al., 2018). In the age of globalisation and interconnectedness, it is difficult for countries with great power status to distinguish between China's domestic political goals and its foreign strategy. The separating line for China has become progressively indistinct as a result of the growing quantity of Chinese international interest and accountability (Lanteigne, 2016).

For several years, China has been the world's focus destination for a wide range of solid waste disposal, recycling and reuse which largely from wealthy countries. According to Zhang et al. (2017), around 32 million metric tonnes (MMTs) of plastic waste, textile materials, and paper scraps were sent globally, with China accounting for roughly 40% of the waste in 2016. Thus, China has sufficient grounds to execute a strict plan in July 2017 prohibiting the import of such plastic waste. Back in the year 2002, China adopted the circular economy (CE) in most of the business sectors intending to reformulate growth by concentrating on a abenefits of societal as a whole. It requires decoupling economic activity from limited resource use and removing waste from the system over time (Jiao et al., 2018). The CE is positioned in China as a reaction to the environmental concerns posed by fast growth and industrialization. The debates in CE are about how to eliminate waste and promote resource efficiency (McDowall et al., 2017).

The paper is separated into three sections. The paper's first section will discuss worldwide plastic manufacturing as well as China's role as a global recycling and waste trade destination. The next section explores more into the study's objectives and procedures. The following section examines China's national sword policy, its impact on the waste trade, its ramifications in Southeast Asia and the linking between waste trace and CE. The paper concluded with a suggestion for future research.

WASTE TRADE OVERVIEW

Plastic Production

Plastic was invented in the late 1930s and in the late 1950s, a bigger scale of artificial carbon-based polymers derived from fossil hydrocarbons was produced. As a result, the expansion of a wide range of synthetic resin materials has gotten out of control. Over the last century, it has risen to 8.3 billion tonnes. China accounts for 28% of worldwide synthetic resin production. The most popular application of plastic is for packaging, which is ultimately discarded (Wang et al., 2019). Packaging accounted for 48% of all-polymer resin manufacturing. It is made up of non-biodegradable recycled

plastics that are frequently discarded in landfills or spread throughout our environment. Accordingly, nearly 80% of the waste in the water is made up of plastic (Kosior et al., 2020).

Even though the demand for plastic remains to grow, the impact of the dependency on the solid waste management receives little attention. Accordingly, the single-use plastic bottle and plastic container end up in the trash stream after use, contributing to the vast volume of plastic waste created globally. Governing the massive amount of plastic produced continually is not an easy task mainly in countries where the economy and population are both rising (Brooks et al., 2018). Because plastic can be used in a variety of ways and blends with a range of other materials, there are various aspects to consider when recycling it. Similarly, Ajwani-Ramchandani et al. (2021) in their study ascertain that certain commodities have a substance that restricts the number of recyclables. While there is a continuing debate about plastics waste recycling, China saw it as a profit source since it could be utilised for export or sale. Hence, developing countries started exporting waste materials and recycled plastic trash to China from being disposed of in landfills or burnt in their own countries.

Today, China is known as the world's most important recycler of plastic waste. According to Profita and Burns (2017), China absorbed around one-third of the waste and recyclable materials generated in the US. To control it, China began the Blue-Sky project in 2018 intending to administer its import limitations. China executed a one-month ban on all imports from the US in May 2018. Consequently, the effects of China's national sword policy push on the US recycling business were felt. Accordingly, the number of metric tonnes of waste paper imported into China plummeted by 81%. This was extensively seen as a continuation of the 'operation green fence' (OGF) and national sword policy campaigns. The execution implies that the country is no longer allowed to send any commodity items to Chinese consumers, and there are few possibilities for getting rid of them. Thus, it is realistic to expect China to keep the restriction in place and continue to accept US goods (Wang et al., 2020).

Plastic Waste Management

For past few years, China is the only country that has been collecting and recycling the majority of the world's plastic waste, accounting for roughly 57% of a large-scale segment, the Chinese government has begun to alter its policy to include more stringent and thorough inspections for identical shipments to China. Subsequently, in July 2017, China informed the World Trade Organization (WTO) of the execution of its national sword policy, which included a ban on 24 distinct types of solid waste. It applies to a wide range of plastics while also demanding stricter recycling pollution regulations for other export wastes (Foulsham and Whitney, 2019). In this situation, plastic may cause abundant negative consequences on sea life and land-based environments. Plastic waste can degrade into tiny particles and mix with food chains, posing a major threat to food chains (Parveen, 2018). Thus, it's critical to promote public awareness of the risks of plastic trash. The role of social media is crucial in building public awareness on this issue. The strategy now focuses mostly on single-use plastics and packaging. For instance, the UK government proposes to levy a price on poor-quality plastics, particularly the most environmentally harmful single-use plastics such as carbon black plastic, lids, straws, coffee cups and other household products (Shiffman et al., 2017).

The management of plastic waste is becoming more complex as the use of plastic expands. The most important solution is to reuse and recycle. However, the reality is that more than half of all plastic waste is separated for recycling and exported abroad, and China imports half of the world's waste (Brooks et al., 2018). Alike, most advanced countries lack the capacity to dispose of huge amounts of surplus plastic items, and they are convinced that waste exports are the best option. The waste-control system is unsustainable, particularly for those nations in the global north that are beginning to tighten and adopt environmental legislation that may hinder this interchange (Parajuly and Fitzpatrick, 2020). In China's manufacturing process, plastic waste has traditionally been the principal source of raw materials. On the other hand, China's import requirements are now part of the OGF, which attempts to advance the quality of plastic waste while reducing illegal imports and avoiding reliance on certain importers (Brooks et al., 2018). Despite the fact that the majority of the plastic waste sent to China was recycled, waste management in China has yet to attain a fully dynamic

classification. According to Jambeck et al. (2015), between 1.3 to 3.5 million tonnes of plastic waste pollute the ocean every year. Furthermore, waste management and small businesses are polluted by insufficient or illegal imports of plastic trash, as well as problems with trash leakage disposal. China's prohibition on non-industrial plastic waste imports has wounded recycling, refurbishment and worldwide plastic waste exports volume significantly. Alike, it has also outpaced the steep increase in recycling fees, the export of plastics for processing, the expansion of waste plastic landfills, the storage of recyclable plastics and the increased plastic incineration (Velis, 2014). Compared to other countries, the cost of plastic processing in China is cheaper due to less expensive labour costs and lower transportation costs for plastic waste. However, in 2018, the UK burned up to 670,000 tonnes of plastic waste due to China's new policy of increasing pricing and recycling capacity. 1.3 million tonnes of recyclable waste were collected in Australia at the same time (Parker and Elliot, 2018). Due to high recycling costs and low revenues, few localities in the US forego recycling plastic waste. According to Dauvergne (2018), plastic waste from developed countries including the UK and the US is now being exported to developing countries, frequently with poor waste management techniques. This is a crucial factor to consider while reevaluating the policy of separating plastic waste through exports in order to find a tangible solution to the worldwide plastic consumption explosion.

On the other note, a few developing countries including Vietnam, Malaysia and Thailand regard it as an economic prospect and start importing plastic waste to generate cash for local firms. Imports of plastic waste would be subsidised, and it might become a lucrative source of income for organisation or individual. Furthermore, waste is a reusable resource that can be utilised if it is properly processed and recycled (Ellis-Petersen, 2019). Nevertheless, to deal with significant amounts of waste, adequate waste control management is required. On the other note, Daniele and Regan (2019) in their study highlighted that, it is difficult for Malaysia as the manufacturing country to deal with imported plastic waste because it is hereafter returning back to the industrialised countries.

METHODOLOGY

This paper adopted a qualitative method to establishing a preliminary thoughtful of the environmental consequences of plastic waste. Furthermore, a systematic literature review was done to analyse the condition in an enormous research area to support authors in exploring the topics linked to the study domain (Nier et al., 2020). This study examines relevant literature on waste trade management, China's national sword policy and CE in a systematic manner. The initial data was gathered from a variety of scholarly databases, including Scopus, WoS and Google Scholar, which all fit to the keywords of this study. The methodology used in this study is comparable with Fabbe-Costes and Jahre (2008), in which the concept of a systematic literature review able to offer a rich understanding, particularly on logistics and supply chain-related topics. The authors then present the current situation of waste trade management, China's national sword policy and CE as well as a study summary and findings.

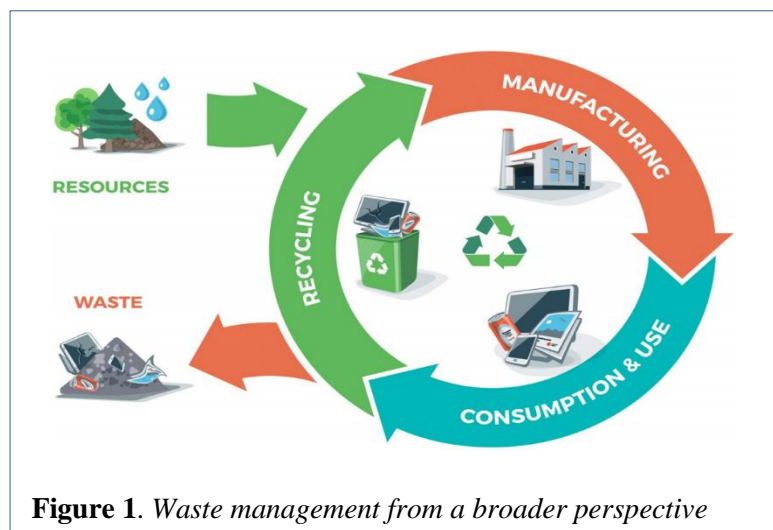
FINDINGS AND DISCUSSION

Waste Trade within the Southeast Asia's Environment

China's prohibition on waste in the plastics industry has had a worldwide impact. The northern and southern countries of the globe pay little attention to waste recycling and refurbishment systems. Therefore, Chinese consumers and dealers will choose to buy and gather wastes from the northern hemisphere (Minter, 2015). Plastic is the main material used in a wide variety of food and beverage containers and packaging, therefore its use is unavoidable. Despite this, only around 10% of used plastics being recycled, with the rest being landfilled, burnt or discarded. Additionally, because numerous nations depend on on China for recycling, it resulting in low local recycling rates. At the end contributing to the unwanted plastics waste in the seas and atmosphere. This crisis has now become a worldwide concern. Local governments continue to manage the plastic waste, however, in

order to reduce plastic waste, most national and state governments are attempting to shift environmental responsibility for plastic waste on producers (Ling and Wahab, 2020). The burden on Southeast Asian port operations is increasing due to the growth of waste goods. It comes after China placed import limitations on plastic waste. Due to an increase in the number of containers containing waste materials, the Cat Lai Port, Ho Chi Minh City has been obliged to temporarily cease the assortment of paper and plastic waste (Whelan, 2019). According to the terminal operator at Saigon New Port, an estimated 8,000 twenty-foot equivalent units of uncollected cargo containing rubbish has caused the loading and unloading activities delayed, resulting in a temporary capacity surplus. Thus, the port had already restricted one month imports in an attempt to clear the excess of orders, nonetheless it all in vain. This is a huge problem because limited ships can be delivered to China. Alike, some dealers are delaying their ship movements to other nations. Vessel delays, terminal infrastructure, cargo weight cap for trucks, traffic in the surrounding area and the port congestion has been a concern for years. Furthermore, the Vietnam authority has created measures to limit the amount of time waste containers spend in port while remaining unaffected. The current Chinese restriction on plastic imports has reverberated globally. Other markets are being used to redirect scrap, particularly in Southeast Asia, where Vietnam and Malaysia are dominant (Wang et al., 2019). Due to that, customs are adopting more aggressive measures to minimise the number of imports with expired licences.

Southeast Asia appears to have a sufficient amount of garbage and plastic waste. This is because, plastic waste come from Western countries has accumulated on the coastlines of Indonesia, Malaysia and the Philippines. Concerns about environmental degradation have caused the government to enact new export laws in response to the surge in waste and air landfills. For instance, plastic waste from the Germany, UK, Australia and the US was illegitimately dumped into Malaysia under the guise of ‘other imports’. In addition, Malaysia received 3000 tonnes of illegally imported plastic waste from Australia, the US, France the UK, Canada and Japan as well as five unlawful waste containers from Spain (Ellis-Petersen, 2019). Therefore, the Malaysian government has decided to demonstrate to the rest of the globe that Malaysians are committed to preserving their borders and preventing them from becoming landfills for other countries. Figure 1 deficit the waste management from a broader perspective covering the design for repair, reuse and recycling by the adoption of technological advancement, production of recycled items using a renewable source, consumption and use and waste management towards sustainable development.



China National Sword Policy

Prior to the national sword policy, China raised its manufacturing business by buying recyclable waste globally and selling it as a brand new product that included everything from apparel to toys. It

is to promote domestic waste recycling, improve economic conditions, and enhance China's environmental situation (Foulsham and Whitney, 2019). This national sword policy has an impact on the raw material stock, and it may have dreadful consequences. Nevertheless, the legislation will not be revoked somewhat, the recycling production area and the regional transition will be relocated. Thus, plastic processors in China have moved their operations to Southeast Asia, particularly Vietnam, Malaysia and Thailand, and branded themselves as suppliers of materials that fulfil China's specifications (Parker, 2018). On the other hand, the goal of China's national sword policy is to prevent illegal waste smuggling on the market for developing countries' trash and recycling sectors. At a gathering of world leaders in 2017, China stated that it will reduce not only waste groupings but also the capacity of imported waste. Furthermore, Gregson and Crang (2018) found that exporters' costs quickly increased, making it difficult for many enterprises to access China. China notified the World Trade Organization (WTO) of a ban on 24 categories of garbage in late July 2017 and boosted its composition to an adequate threshold of 0.5%. For the bulk of the world's trash and metal dealers, China is the leading processor and importer of all types of plastic, paper and other recyclable waste. Accordingly, China's national sword policy enforces several pollution limits, with unimaginable ramifications for the worldwide recycling business. This plan has a global impact on waste management because China controls 55% of the world's major storage locations for grass paper and other materials (Eng, 2019).

In 2010, China's import policies for waste, such as those for metals and plastics became further flexible. However, the rapport between China role as a foremost importer and supplier of plastic waste was interrupted in 2013 when China momentarily banned waste imports and obligatory that waste be imported in a lesser amount of polluting effect. This effort was labelled the OGF campaign because it underscored the project's unsustainable nature. The main purpose is to stop illegal foreign commerce and smuggling while simultaneously improving the quality of water brought into China. Brooks et al. (2018) strengthen that, although the OGF has reduced some plastic commerce, it has yet to stop the illegal traffic in plastic waste. While the green barrier is still being built, China established a new import policy in 2017 that makes it illegal to bring non-industrial plastic waste into the nation. Additionally, the OGF will inspect all imported waste including the quality of waste that are able to fulfil national assessment requirements. 70% of imported waste containers were inspected in the early phases of the OGF implementation, generating significant interruptions in port operations and resulting in scarcities in the downstream supply chain. Any plastic material found in excess of the required quantity will be rejected by an OGF, which can only minimise contamination to about 1.5% of packages. Approximately 800,000 tonnes of commodities were rejected and returned to the shipper at a cost in the first six months of the OGF implementation. Accordingly around 247 companies' import licences were suspended. The OGF imposes restrictions on 'international trash smuggling', however, it currently only applies to e-waste (Parveen, 2018). Both the national sword policy and the OGF in China are modern protests against trash and recycling. They are important from a political standpoint since they specify policies to prevent dumping, pollution and incineration. The industry is not limited to a single country or region, but it is also a worldwide burden that can only be addressed via interdependence and interaction (Sun, 2019).

Waste Trade and Circular Economy

Kirchherr et al. (2017) defined CE as a combination of waste hierarchy terminology, such as reduce, reuse, and recycle. Recognizing that CE necessitates a systemic shift away from a waste economy, in the current situation it receives far less attention. Even fewer efforts are made to connect the CE to broader policy and scholarly concerns, such as those around sustainable development. Hence, it is important to include an economic system that aims to reduce, reuse, and recycle (3R) materials at various scales, from individual consumers to national governments. Alike, CE is a 3R operation in the production, circulation, and consumption of products in China. The intellectual and practical interpretations of a Chinese CE, on the other hand, diverge significantly from the legal standpoint. Academics agree that the goal of developing a CE in China should be a comprehensive efficiency-oriented approach that guarantees closed-loop material flows at all stages of production, distribution, and consumption. CE is viewed as a new development model that will assist the country in

transitioning to a more sustainable economic structure to address present environmental issues and resource scarcity (Su et al., 2013). As demonstrated in Figure 2, CE requires all stakeholders to work together to ensure waste items can be utilised. Starting from production and purchasing, consumption and use follow by collecting and processing, all activities must continue in a circle to ensure the waste materials can be used for various purposes.

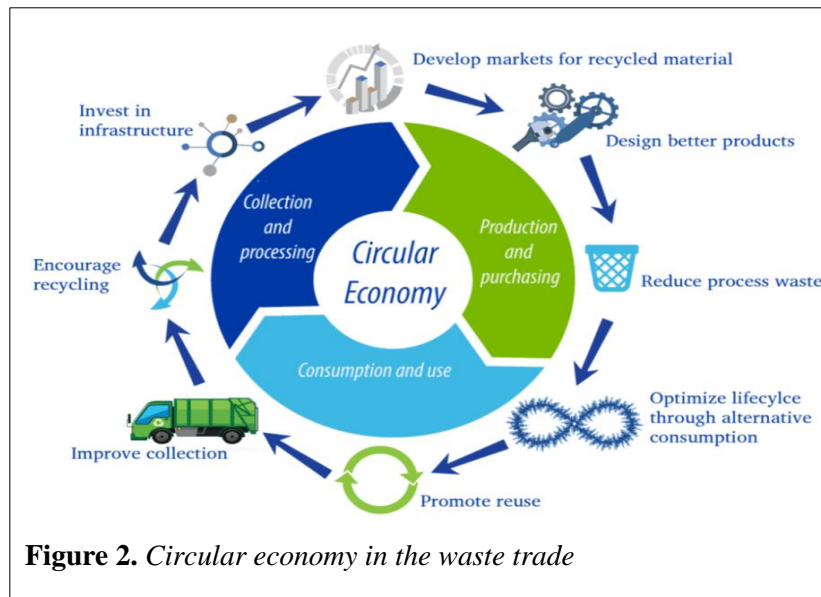


Figure 2. *Circular economy in the waste trade*

The most prominent background concepts of CE are related to eco-effectiveness and industrial ecology which are linked to renewable energy and recycling materials. Alike, CE is described as an economic system that is uplifting or recovering by intention and design where the economic value of materials, products and resources is conserved for as long as practicable, and waste output is minimized (European Commission, 2015). However, the lack of awareness of what the CE would imply shows a disconnect between the thinking of larger corporations and policymakers and the majority of the industry. In practice, there are three categories of CE. Firstly is waste disposal, which refers to the circulation of waste, secondly is product remanufacturing, which refers to the circulation of products, and lastly is the most advanced version covering the economy platform or sharing economy, which refers to the circulation of services.

CONCLUSION

Recycling and waste disposal are industries that are deemed backwards. As China develops, some nations will incur significant losses as a result of its policies that reduce global trade intervention. China, which is the world's biggest recycler, has learned a valuable lesson as a result of the policy change. Most exporting countries have suffered as a result of the crisis, and are now faced with the dilemma of how to recycle excess waste and where to export it. Only a scarce corporations, non-governmental organisations, and governments have shown interest in addressing and controlling this issue thus far. There is no shortcut to these problems which necessitate a long-term initiative. China's decision to establish both the OGF and national sword policy is comprehensible because it will have a significant impact on its population and environment. Both initiatives were applied to all industries and producers in China as an initiative toward the CE transition. The government and the international community are concerned about this and are working to protect the environment. Looking forward, every stakeholder in a country, including government regulatory bodies, should carefully monitor the effectiveness of waste management. Alike, the industries and producers need to import more waste materials from other countries towards the transition of CE. These position actions will benefit future generations and global well-being. Moving forward, raising public awareness of the needs of CE is necessary. Thus, social media and the internet play an important role in promoting waste management

and at the same time promoting the CE to improve the planet. Industries and producers must train downstream in the supply chain because a tiny action can have a significant impact. It may take some time and effort to make improvements, but it is now necessary to take action. It is vital to educate the people, and this should begin at a young age, with the goal that future generations would value the environment above all else. Moreover, the government should educate the public that failing to manage waste will have a bad impact on the environment, thus education on plastic waste management should be considered. Most importantly, this ensures long-term viability, and other countries should emulate China's waste trade management strategy. Finally, even Southeast Asian regions are importing waste from other nations, which may be harmful to the environment but can bring great revenues to the country in the long run. This will offer industrialised countries some time to re-plan and arrange garbage during the CE transition.

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