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The Trend of Plastic Recycling Policies in Japan on the Current Legal Regulation of Transboundary Movements of Plastic Waste

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Abstract

Since China's import ban on solid waste in 2017 and the entry into force of "Plastic Amendment" to the Basel Convention, global plastic waste trading has entered a new historical stage that transboundary movements of plastic waste is no longer regarded as a wise approach for many developed countries. Due to the fact that China, a traditional plastic-importing country, no longer accepts plastic waste after 2021, and the strict regulations on cross-border plastic transactions under the amendment to the Basel Convention, the circulation of plastic waste is increasingly restricted, making it imperative for the world to build a new plastic disposal system to deal with the immediate crisis. As a traditional plastic-export country in Asia, Japan faces domestic plastic overstocking crisis as well. However, as a well-known environmentally-friendly country, Japan's new policies and legal perfection implemented thereafter have triggered concerns. Regulations through the whole process including production, use, recycling of plastic have clearly specified the responsibilities of main bodies, and the macro control of product production standards sets a unified supervision system at the national level. The valuable experience of this "Japanese Model" can provide some references for China's future improvements of domestic plastic waste management.

Keywords: plastic waste, Basel Convention, Japanese management, Prior Informed Consent Procedure

1. Introduction

In July 2017, Chinese government added 24 types of solid wastes, including plastic waste, into the *Catalogue of Prohibited Import of Solid Waste*, and decided to achieve a total ban on the import of "foreign garbage" in 2021. In this context, the passage and entry into force of the Basel Convention Amendment led the world into a new era of the global trade of plastic waste. The new system poses challenges for a lot of countries, including Japan, a traditional plastic waste exporting country. Whether and where the massive amount of plastic waste can truly be "treated on site" is a follow-up issue worth paying attention to.

The current researches have been focusing on this field, and many of them emerged since China's prohibition against "foreign garbage" in 2017 and the Amendment to Basel Convention in 2019. In brief, the main content of the existing

studies focuses on the following issues: A. Affirming the historical significance of the Amendment and its positive effect on the disposal of global plastic waste. B. Conducting comprehensive studies on the Amendment and China's "foreign garbage" ban. Meanwhile, Japanese researchers pay more attention to the impact of China's "foreign garbage" ban on Japan. However, some deficiencies can be seen in current researches. Most studies are basing on the theoretical point of view, lacking of analysis and case studies. On the basis of current researches, in this paper, Japan is selected as a case to study the new trends and current issues in the disposal of plastic waste on the legal regulation formed by China's prohibition and Plastic Amendment to the Basel Convention. Eventually, to provide enlightening clues for the improvement of China's plastic waste management.

2. The New Era of the Global Trade of Plastic Waste

2.1 China's Ban on "Foreign Garbage" in 2017

In July 2017, the State Council of China published the new regulations of the import of plastic waste, titled *Guidelines of Prohibiting the Import of 'Foreign Garbage' and Promoting the Reform of the Solid Waste Import System*, which imposed a total ban on the import of hazardous solid waste by the end of 2017 and solid waste by 2021. With this prohibition, the Ministry of Ecology and Environment will no longer accept and approve applications related to the import of solid waste. Meanwhile, on September 1, 2020, *The Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste* was officially implemented, in which Articles 23 and 24 clearly stipulate that all sorts of dumping, stacking, and disposal of solid waste from overseas are prohibited, and according to the government, the Zero Import of solid waste will be achieved progressively in the future.

The series of moves stated above in China have produced notable results. Since the beginning of restrictions on imports in 2017, the total amount of imported waste, especially plastic waste, has sharply decreased. According to UN Comtrade, the total amount of plastic waste (HS code: 3915) imported to China in 2017 was approximately 5.83 million tons.[1] The effect was remarkable. By 2020, the data had dropped to 0.31 million tons, the decreased margin to be over 99%, [2]which means the "zero import" goal required had been basically achieved. In addition to bringing astonishing results to China's management of solid waste pollution, this ban has also indirectly formed a forced mechanism on the regulation of global solid waste (especially plastic waste) circulation, promoting the completion of the Plastic Amendment.

2.2 The Overview of Basel Convention Plastic Amendment

The Basel Convention was adopted in 1989 and entered into force in 1992. The convention is the most comprehensive international regulation on the disposal of waste, especially hazardous waste. One of the most noteworthy procedures set out by the convention was the Prior Informed Consent (PIC) procedure, which requires that the parties could only export hazardous waste to another party in the situation that the importing state has been properly informed and has consented to the trade. Contracting parties are entitled to classify plastic waste as hazardous waste in domestic legislation to restrict related trade. If the exporting state believes that the management of the importing state could be harmful to the environment, the exporting state should also prohibit the import of hazardous waste or other waste to that country, and vice versa. Unless the exporting state has made prior arrangements with other non-contracting states, it is not allowed to trade hazardous waste or other waste with such states.

The attempt of this mechanism was clear: to avoid the uncontrolled transboundary movements of hazardous wastes to third world countries, and to set out a more transparent mechanism of global waste trade. All in all, the Basel Convention is a milestone in the regulation of international solid waste management. In practice, however, shortcomings still existed, especially in the adjustment scope of the Convention. The lack of restrictions on plastic waste, particularly, brought hidden troubles to follow-up practice.

Since China used to be the biggest export destination for solid waste, the prohibition is

[1] Refer to the Trade Data from UN Comtrade: https://comtradeplus.un.org/TradeFlow?Frequency=A&Flows=M&CommodityCodes=3915&Partners=156&Reporters=all&period=2017&AggregateBy=none&BreakdownMode=plus

[2] *Ibid.*

bound to cause overstocking among global solid waste market, most of which is plastic waste. On the basis of those above, in October 2018, Norway proposed an amendment to the Basel Convention, in which it suggested to add plastic waste to the subjects of PIC procedure, to ease the increasingly serious environmental crisis caused by the overuse of plastic. The proposal had been accepted and the official text had been confirmed in May 2019, representing the updating of the international legal framework of plastic disposal system.

The Amendment divides plastic waste into three categories as follows: Hazardous Wastes (in Annex VIII); Wastes Requiring Special Consideration (in Annex II); Non-hazardous wastes (in Annex IX). Waste belonging to Hazardous Wastes or Wastes Requiring Special Consideration would be the subjects to the PIC procedure. Furthermore, the Amendment also clarifies the illegal transportation of plastic waste as a criminal act. Overlapping with the date of China's "foreign garbage" ban, the entry into force of the Amendment in January 2021 marks a turning point of global plastic waste trade.

From 2017 to 2021, the reforming in this field has been started in a lot of countries. As a major exporter of plastic waste, also as a developed country and a country famous for environmental protection, Japan was confronted with some kind of domestic waste crisis as well. What kind of reforms have been carried out, what kind of changes can be seen ever since, and what issue still exists in the governance of plastic, are worthy of our inquiry. In the background of rapid economic growth, the surge of plastic waste in China will inevitably cause the same challenge of recycling and processing as it did in Japan. Therefore, this article selects Japan as a case, to analyze the management of Japanese government and to summarize its reference value for China's future move in plastic governance.

3. The Management of Plastic Waste in Japan

Japan's plastic waste exports have undergone major changes since China's ban in 2017, with a large number of shares of plastic waste that originally destined for China are transported into Southeast Asia, resulting in serious plastic pollution in this region. In recent years, due to the tightening policies in Southeast Asian countries and the entry into force of the amendment, plastic waste in Japan is facing an awkward dilemma. The stranding of a numerous amount of plastic, however, triggering a series of reformation in Japan.

3.1 The Past and Present Issues in Japan's Plastic Disposal Governance

As one of the developed countries in Asia, Japan has long been a major exporter of plastic waste. According to UN Comtrade, in Japan, out of 9 million tons of plastic waste (HS code: 3915) discharged in 2017, up to 1.43 million tons were exported overseas.[1] After China's ban in 2017, Japan shifted its focus to Southeast Asia. According to the Ministry of Finance of Japan, in 2017, the proportion of plastic waste exported from Japan to China accounted for 71.5% of the total. Strikingly, in 2018, the figure dropped sharply to 7.3%, while the trade with other countries, such as Thailand, Malaysia, and Vietnam, burgeoned from 28% in 2017 to 63.4% in 2018.[2]

The hasty move in export caused overstocking emergency of plastic waste that headed for China, leading to domestic recycling issues. At the same time, in Southeast Asia, due to the overwhelming burden of plastics disposal after 2018, import restrictions have been strengthened. For the above reason, Japan's total exports of plastic waste plunged. According to the Ministry of Environment of Japan, the total amount of plastic waste that Japan has to recycle and reuse domestically reached twice the upper limit of storage norm in 2019, posing a serious challenge to domestic plastic waste treating capacity.

3.2 The Current Issues in Japan's Plastic Disposal System

Admittedly, this treating capacity has been long overrated. Entering the 21st century, the discharge of plastic waste in Japan has been sharply increasing year by year, and the insufficiency in recycling and disposal system became an urgent issue inevitably. Regardless of the dilemma, as a so-called environmentally friendly country, the rate of plastic waste utilization released by Japanese government has long seemed high. Nevertheless, a significant portion of plastic waste in Japan is treated by

[1] Refer to the Trade Data from UN Comtrade: https://comtradeplus.un.org/TradeFlow?Frequency=A&Flows=X&CommodityCodes=3915&Partners=156&Reporters=392&period=2017&AggregateBy=none&BreakdownMode=plus

[2] Refer to the Trade Statistics of Japan: https://www.customs.go.jp/toukei/info/index.htm

incineration. In 2005, Japan's plastic waste utilization rate was 58%, and by 2017, the rate has risen to 86%. [1] The figure has been increasing year by year. Nevertheless, a significant portion of plastic waste in Japan is treated in a half-baked way in some garbage incineration plants. In 2005, the amount of incinerated plastic waste was 3.68 million tons, and in 2017 the data rose up to 5.24 million tons. [2] Incineration accounts for a significant proportion of plastic waste disposal in Japan. In addition, due to the high labor costs and strict environmental standards, a large amount of plastic waste goes to developing countries, in which it would be further processed and re-exported afterwards. This processing work was mostly undertaken by China before the ban in 2017. As far as we can see, the high rate of plastic waste utilization is not necessarily equal to a perfect waste disposal system.

After 2017, since the traditional way seems unsustainable, groping for a new route became more and more necessary. Japanese Government introduced a series of regulations to alleviate the crisis that are proven to be effective for a modern country to deal with plastics.

3.3 The New Movements on Plastic Pollution Control in Japan

3.3.1 The 3R Principle and Plastics

Japan has so far implemented four versions of *The Fundamental Plan for Establishing a Sound Material-Cycle Society*, and the latest version sets a target that the final disposal amount will be reduced to 13 million tons by 2025. To build a sustainable society, the most well-known principle in the fundamental plan was the "3R principle", namely Reduce, Reuse, and Recycle. As for concrete measures, for example, maintaining the existing system, developing necessary technology, raising awareness among young generation are mentioned. In addition, strict restrictions have been imposed on the amount of landfill waste, defining the "Emitter Responsibility" and "Producer Responsibility" of enterprises, implementing accountability system. The 3Rs sets a comprehensive rule for waste management, notwithstanding, standards for plastic waste remain insufficient.

In May 2018, then-Minister of Environment of Japan, Masaharu Nakagawa, attended the G7 Summit and refused to sign "G7 Ocean Plastics Charter". In response, the minister stated that Japan needs to take a cautious and serious attitude to investigate the impact of reducing the use of plastic products on people's well-being and industries.[3] The statement was seen as a response on Japan's plastic recycling issue resulting from 2017 China's ban. Notably, one year later in 2019, the domestic urgency of plastic recycling prompted the introduction of *Plastic Resource Recycling Strategy*. In the Strategy, the 3R Principle is actively applied to promote comprehensive treatment of plastic pollution, including reducing dependency on non-renewable resources, promoting spread and use of renewable resources, and declaring that Japan will further promote its new technology for environmental infrastructure globally in the future.

According to the requirements of the Strategy, to implement the 3R principle in plastic management, practical details are as follows:

I. To reduce the production and use of oil-based plastics from the source, increasing the application of renewable and degradable materials at the same time, and to reduce the use of disposable plastics;

II. To carry out the recycling and reuse of plastics, replanning design on the current system of plastic classification, and to strengthen the cooperation between recycling enterprises and local autonomous bodies;

III. To increase the use of bioplastics, and to promote the development of renewable plastics. Local autonomous bodies should encourage enterprises and citizens to produce;

IV. To initiate a comprehensive regulation concerning ocean plastics pollution, including multiple aspects regarding discharge of plastic waste, ocean plastic waste recycling, microplastic treatment, etc.

V. To promote international cooperation on plastic governance, and it was emphasized that Japan should play a leading role and set an example for global governance of plastic pollution, in particular, reducing the burden on developing countries, improving relevant mechanisms and legal systems, and actively

[1] Refer to the statistics from Ministry of Environment of Japan: https://www.env.go.jp/recycle/waste/sangyo.html

[2] *Ibid.*

[3] Ministry of Environment of Japan. *The Record of Press Conference (2018.6.12).* https://www.env.go.jp/an-nai/kaiken/h30/0612.html.

constructing cooperations between Japan's domestic industries and enterprises overseas.

3.3.2 The Legal Perfection on Plastic Recycling

On the basis of *Plastic Resource Recycling Strategy*, in June 2021, Japanese government issued *Plastic Resource Recycling Law*, which came into effect in April 2022. Under the legislation, the production, utilization, recycling, and regeneration of plastic products have been subjected to stricter legal restriction.

Instead of 3R principle, the new law adopts the new principle of "3R+Renewable", i.e., 4R principle so as to comprehensively control the entire process of plastic production, utilization, and recycling through the principle of renewable, reduced, reused, and recycled. Moreover, the law focused on the issue of accountability mechanism, and the obligations of government, enterprises, local autonomous organizations and citizens have been defined. On this foundation, comprehensive governance became the final aim.

According to article 3 to 6, firstly, the government is responsible for the top-level design of recycling system, providing financial support for related industries, disseminating and applying technological achievements, strengthening people's environmental awareness through publicity and education. Local government should provide necessary assistance including technological support and information sharing to local public entities. Last but not least, enterprises have an obligation to reduce the use of plastic waste, and for citizens it is obligated to comply with the waste classification rule formulated by local government.

In view of this, in the system of Japan's plastic waste disposal, the linkage between government and local public entities plays a critical part. The foundation of the system is certainly built by the government's regulations and laws, yet as the subject of practice, local public entities play a key functional role in practice. Thus, the coordination between the two is absolutely significant. Notably, as the smallest administrative unit in Japan, local public entities undertake the most practical working in waste management, such as supervision on illegal dumping and recycling process. Maintaining the executive force of locals could be the key point of "Japanese model". Also, enterprises and the public are the main producers and consumers of plastic waste, for this reason, strengthening propaganda and enhancing citizen participation in plastic governance could be rather effective. All in all, the key point of "Japanese model" is, to make sure that the whole process of plastic proposal is being properly regulated.

Within all these stages, a distinguishing system named "Design Guideline System and Design Certification System of Plastic Products" stipulated by article 7 to 9 is a worthy topic to be investigated.

3.3.3 Design Guideline System and Design Certification System of Plastic Products

In order to ensure the effective recycling and utilization of plastic resources, avoid excessive production of plastic products from the source, and ensure that the whole process conforms to Plastic Resource Recycling Strategy, Plastic Resource Recycling Law stipulates two new systems: Design Guideline System and Design Certification System of Plastic Products.

I. Design Guideline System of Plastic Products

This design guideline system for plastic products specifies the standards that should be followed during the product design phase (including the trial-production phase). Firstly, in the production stage, the following factors should be considered: A. Reduce the use of plastic materials; B. Encourage simplified packaging and avoid excessive packaging; C. Improve the durability of products and extend their service life; D. Make the products renewable; E. Reduce the types of raw materials used in the production of one product; F. Use easily degradable raw materials; G. Consider convenient transportation of products in design; H. For products that are difficult to reuse and regenerate, make sure they are suitable for Incineration.

As for materials, detailed regulations are as follows: A. Minimize the use of plastic and replace with other materials as much as possible; B. Use easily recyclable raw materials; C. Use renewable plastics; D. Use biodegradable plastics, etc.

In addition, enterprises are obligated to indicate information on their official websites, product packaging, and user manual regarding the recycling, transportation, incineration, and precautions during recycling and disposal of products. And when necessary, cooperation between manufacturers, suppliers, retailers, recycling enterprises, national and local public

organizations, and other entities should be implemented.

II. Design Certification System of Plastic Products

Under the guideline system, when it comes to specific plastic products, manufacturers must apply to national authorized inspection agencies for technical review (design survey) of whether the design meets the requirements of Guideline before production. After receiving the applications, the inspection agencies are going to issue review results based on the submitted documents, and submit the results to national authorities for filings. Thereafter the government will issue design certifications to the manufacturers, licensing the manufacturers for production.

To sum up, after China's ban in 2017, Japan has introduced a series of new institutional and legal measures to actively address the problem of plastic waste problem. Specifically, detailed regulations have been made on the whole process through production, use, recycling. Also, the responsibilities of main bodies have been specified. From micro to the whole, a relatively comprehensive recycling system plays a dominant role in plastic management.

4. Enlightenment from Japanese Plastic Recycling System

Since 2017, China has been gradually banning imports of solid waste, vigorously promoting the comprehensive management of plastic recycling. In January 2020, the National Development and Reform Commission and the Ministry of Ecology and Environment issued the "*Opinions on Further Strengthening the Treatment of Plastic Pollution*", proposing the policy of "Prohibiting, Replacing, Standardizing" to improve current system, focusing on the application and promotion of plastic substitute products, exploring and optimizing new models for plastic industry. In September 2021, *Plastic Pollution Control in 14th Five-Year Plan* issued, accelerating the standardized recycling and reuse of plastic waste, and carrying out plastic waste management in key areas such as water areas, scenic areas, and rural areas.

Currently, relevant measures are mainly facilitated by administrative instructions, and the planning is mostly carried out at the macro level, with high goals proposed. However, there is still a lack of systematization at the specific institutional and legal levels. In this case, the Japanese model could be a useful reference. Overall, the following suggestions can be made for the improvement of China's plastic governance system in the future.

4.1 Clarify Responsibility Attribution and Improve Accountability Mechanisms

Plastic Pollution Control in 14th Five-Year Plan has set out a long-term programme of management on production, circulation, consumption and recycling of plastic products, yet it is still a relatively general plan and lacks specific responsibility attribution. In order to better implement it, concrete responsibility attribution is necessary. With Japanese *Plastic Resource Recycling Law* for reference, combined with the current situation, carrying out the responsibility by classification divided as nation, provincial governments, autonomous organizations, enterprises, and citizens, and clarifying the accountability and accountability system, are feasible paths for improvement.

4.2 Improve the Supporting Legal System and Strengthen Legal Protection

At present, China's regulations on the recycling and utilization of plastic waste are mainly based on administrative instructions. Although regulations relating to solid waste control could be found in early laws and regulations such as the *Solid Waste Pollution Prevention and Control Law*, such are still relatively general articles for practice. The seriousness and complexity of plastic pollution made it imminent to enact specialized and contemporary regulations. Japanese practice could be a proper role model to follow. By making a specialized law on plastic control, to ensure the effect implementation of accountability mechanisms and responsibility of each legal subject, is an accessible route.

4.3 Encourage Local Governments to Introduce Regulations and Adapt to Local Conditions

Inevitably, due to regional diversity, regulations need to be formulated and adjusted according to local conditions in various regions. To effectively achieve the goal of plastic pollution control, it is necessary to take regional diversity into consideration. Referring to Japanese model as above, local autonomous bodies have a certain degree of autonomy to formulate policies or regulations that suits local conditions for better effects in Japan. Giving local governments more autonomy to better clarify standards and accountability mechanisms that suits different regional characteristics is the crux of the matter

that could determine the results of policy implementation. Therefore, provincial governments and prefecture-level cities formulating laws and regulations within the scope of higher-level laws should be encouraged.

4.4 Strengthen Management at the Source of Plastic Production

A key to controlling plastic pollution is to control the production of plastic products at the source. In the *Plastic Pollution Control in 14th Five-Year Plan*, although there are requirements about reducing the use, simplifying packaging, and using recycled materials in the production process, there is still a lack of specific institutional guarantees. Referring to Japan's Design Guideline System and Design Certification System of Plastic Products, the macro control of production standards by the country could be an effective path to regulate plastic industry. Improving industry access standards by standardizing plastic product design and introducing administrative supervision could be considered as an option.

4.5 Increase the Responsibility of Enterprises in Manufacture and Circulation

The huge discharge amount of plastic waste brings heavy burden to recycling system, especially in the circumstances that the responsibility of recycling rests with local governments. Referring to Japan's measures, rather than solely relying on governments, encouraging manufacturers, retailers, and other enterprises in various stages of plastic circulation to undertake social responsibilities and to participate into plastic recycling process are wise moves to reduce administrative burden. Also, recycling and reuse of plastic products dominated by relevant enterprises can promote technical advancement in recycling industry.

References

Asaki Yosuke. (2021). Historical Development of Extended Producer Responsibility in Japan. *Journal of Hokkaido University of Education (Humanities and Social Sciences)*, *72*(1), 45-54.

Basel Convention Regional Centre for Asia and the Pacific. (2011). *Basel Convention.* http://www.bcrc.cn/atm/7/202308101727077 06.pdf.

Basel Convention Regional Centre for Asia and the Pacific. (2011). *Amendments to Annexes II, VIII and IX to the Basel Convention.*

Basel Convention Regional Centre for Asia and the Pacific. (2020). *Basel Convention.* http://www.bcrc.cn/atm/7/202008172154516 42.pdf.

Chen Xiang. (2019). The Reasons and Influences of Japan's "Resource Circulation Strategy for Plastics". *Japanese Research, 33*(6), 29-41.

Hu Nan, Liu Xi, Zhao Nana & Teng Jingjie. (2018). Enlightenment of the construction of a recycling-oriented society in Japan to waste management in China. *World Environment*, *5*, 48-50.

Kazuhiro Okuma. (2005). Policy Principles and Implications for the International Movement of Waste for Recycling. *Journal of Waste Management and Recycling Department*, *16*(2), 141-150.

Ministry of Ecology and Environment of China. (2020). *Solid Waste Pollution Prevention and Control Law.* https://www.mee.gov.cn/ywgz/fgbz/fl/20200 4/t20200430_777580.shtml.

Ministry of Environment of Japan. (2018). *Plastic Resource Recycling Strategy.* https://www.env.go.jp/content/900532575.p df.

Ministry of Environment of Japan. (2021). *Plastic Resource Recycling Law.* https://elaws.e-gov.go.jp/document?lawid=5 03AC0000000060.

National Development and Reform Commission of China & Ministry of Ecology and Environment of China. (2020). *Opinions on Further Strengthening the Treatment of Plastic Pollution.* https://www.ndrc.gov.cn/xxgk/zcfb/tz/20200 1/t20200119_1219275.html.

National Development and Reform Commission of China & Ministry of Ecology and Environment of China. (2021). *Plastic Pollution Control in 14th Five-Year Plan.* https://www.gov.cn/zhengce/zhengceku/202 1-09/16/content_5637606.htm.

The State Council of China. (2017). *The Guidelines of Prohibiting the Import of 'Foreign Garbage' and Promoting the Reform of the Solid Waste Import System*. https://www.gov.cn/zhengce/content/2017-0 7/27/content_5213738.htm.

Wang Yongming, Ren Zhongshan, Sang Yu, Zhao Hu & Teng Jingjie. (2021). Course,

Achievement and Enlightenment of the Construction of a Sound Material-cycle Society in Japan. *Environment and Sustainable Development*, 4, 128-135.