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The Policy of Plastic Waste Reduction: A Case of Kanagawa Zero Plastic Waste Declaration

Yoshiyuki Nobusawa^{*}

Abstract

Marine plastics and microplastics become the global problem. In Japan the mandatory charge for a plastic bag was introduced as the plastic measure. Kanagawa Prefecture, located in Japan's metropolitan area, has implemented advanced plastic measures. Therefore, this paper considers Kanagawa zero plastic waste declaration and the efforts of local governments concurring with the approved. Therefore, this paper considers Kanagawa zero plastic waste declaration and the efforts of the local government approving. Kanagawa is divided into four areas: urban areas, coastal areas, inland, and mountainous region. This paper analyzes the method for zero plastic waste.

Keywords: Marine Plastic, Microplastic, Kanagawa Zero Plastic Waste Declaration, Plastic Bottle, Cleanup Activities

Introduction

In recent years, as marine pollution in microplastics has become the global problems, there has been a call for plastic reduction. In Japan, there have been many previous studies on microplastics in the fields of oceanography, hydraulic engineering, environmental chemistry, biology, and ecology. These studies include research on surveys of the actual conditions in oceans and rivers, and the impact of microplastics on ecosystems. However, there is little policy research on the issue of preventing plastic waste leakage into rivers, lakes, and oceans.

Therefore, this study surveyed and analyzed the measures taken by local governments actively working on reducing plastic waste. The study covers the Kanagawa Prefecture, which has issued a "Declaration of Zero Plastic Waste in Kanagawa," and the efforts of municipalities that support the declaration and the prevention of plastic waste leakage into rivers and oceans.

1. Outline of the "Kanagawa Zero Plastic Waste Declaration"

In Kanagawa Prefecture, a baby blue whale washed up on the beach at Yuigahama, Kamakura in August 2018. Upon investigation, plastic fragments were found in the baby whale's stomach. It is believed that the baby whale accidentally ingested plastic floating in the ocean.

Kanagawa Prefecture, which was recently selected as the SDGs Future City in June 2018, took this issue as a "message from the whales" and decided to address the growing problem of microplastics as

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the SDG for a sustainable society.¹

The SDGs are the 17 Sustainable Development Goals shown in Figure 1. These are common global goals that the international community is expected to achieve between 2016 and 2030. The goals in Figure 1 were followed in September 2015 at the United Nations during the summit on sustainable development, which adopted “Transforming Our World: the 2030 Agenda for Sustainable Development.”



(Source) Ministry of the Environment [2018], Annual Report on the Environment, the Sound Material-Cycle Society and Biodiversity in Japan 2018 (PDF version), p.8, Ministry of the Environment website (<https://www.env.go.jp/content/900457440.pdf>).

Figure 1. Sustainable Development Goals (SDGs).

The 17 goals include ① no poverty, ② no hunger, ③ good health and well-being, ④ quality education, ⑤ gender equality, ⑥ clean water and sanitation, ⑦ affordable and clean energy, ⑧ decent work and economic growth, ⑨ industry, innovation and infrastructure, ⑩ reduced inequalities, ⑪ sustainable cities and communities, ⑫ responsible consumption and production, ⑬ climate action, ⑭ life below water, ⑮ life on land, ⑯ peace, justice and strong institutions, and ⑰ partnerships for the goals.

The issues of whales in Kanagawa Prefecture and the worsening microplastic pollution are covered by ⑭ “life below water, protect the richness of the oceans,” and the use and disposal of plastics and microplastic pollution falls under ⑫ “responsible consumption and production, responsibility for making and using” and in Kanagawa, ⑰ “partnerships, achieving our goals in partnership” and ③ “good health and well-being, health and well-being for all” are added as goals.

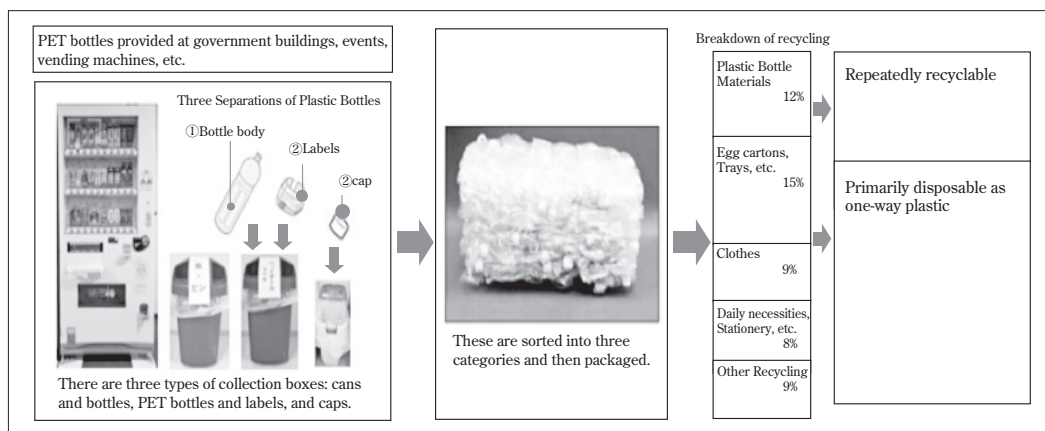
In order to achieve the SDGs, Kanagawa Prefecture has made the “Kanagawa Zero Plastic Waste Declaration” aiming to achieve zero plastic waste disposal as early as possible by 2030 by promoting initiatives such as the abolition and collection of plastic straws and plastic bags, and has implemented the “Kanagawa Action Program for Declaration of Zero Plastic Waste (hereinafter referred to as the “Kanagawa Action Program”)” to reduce plastic waste.

First, the cases covered by the Kanagawa Action Program consist of littering of food, beverages, and

other containers from garbage bins, illegal dumping of garbage—including plastic bags, plastic bottles—and plastic that is intentionally discharged into the natural habitat.²

In addition, there are three measures to promote the Kanagawa Action Program: (1) reduction of one-way plastics,³ (2) promotion of recycling of plastic waste, and (3) expansion of clean-up activities. First, regarding the reduction of one-way plastics, independent efforts will be made by supporting companies and others to reduce this waste, and the one-way plastics reduction forum will be held to present best practices and promote cooperation among municipalities, companies, and others.

On the second measure, as shown in Figure 2, the promotion of plastic waste recycling involves the thorough separation of polyethylene terephthalate bottles into three types (bottle body, label, and cap) at collection boxes in vending machines selling PET bottles installed in facilities in Kanagawa Prefecture and municipalities in the prefecture, as well as the promotion of PET bottle recycling. Municipalities should promote the recycling of waste plastics other than PET bottles.



(Source) Kanagawa Prefecture [2020], p. 6, excerpts from the section on the three types of PET bottles.

Figure 2. Three Types of PET Bottle Separation and Recycling in Kanagawa Prefecture:
Example of vending machine

The third measure involves municipalities and citizen groups in the Kanagawa Prefecture working together to promote cleanup activities along the beaches and rivers, and combat illegal dumping through “early detection, early collection, and activities to prevent plastic waste from flowing into the ocean,”⁴ while also managing aerial patrols using drones.

In this context, this study examined the efforts of municipalities in Kanagawa Prefecture toward achieving zero plastic waste. Kanagawa Prefecture is divided into four areas: urban, coastal, inland, and mountainous, and the efforts of representative municipalities of each area are discussed. Due to space limitations, this paper reports the following three municipalities’ efforts to eliminate plastic waste: Yokohama City (urban and coastal municipality), which faces the sea and is the Kanagawa Prefecture SDGs Future City as well as the prefectural capital; Hadano City (inland municipality), which has many rivers; and Hakone town (mountain municipality), the tourist town.

2. Yokohama City (Urban and Waterfront Municipalities): Zero Plastic Waste Initiatives

Yokohama is the capital of Kanagawa Prefecture and is a government-designated city with a population of 3,758,000 (as of August 2020). Facing the sea, it is a port city, and there are many tourist attractions on the waterfront, such as Yamashita Park, Yokohama Marine Tower (closed until March 31, 2022), Yokohama Landmark Tower, and the Red Brick Warehouse, which pose a high risk of plastic waste being discharged into the sea. Yokohama City is both an urban and waterfront municipality. Therefore, this study considers Yokohama City as the case for two initiatives.

In September 2019, Yokohama formulated the “Yokohama Action Program for Plastic Resource Recycling” (hereafter referred to as the Yokohama Action Program), which provides concrete actions that citizens and businesses can take to prevent plastic waste and promote recycling.

The Yokohama Action Program aims to “effectively use natural resources (reducing environmental impact through resource recycling and securing depletable resources such as fossil fuels), curb greenhouse gas emissions (combating global warming), and contribute to zero emissions⁵ of marine plastics (combating oceanic runoff)”⁶ through plastic countermeasure initiatives with three key strategies.

The three priority strategies are “resource recycling” to reduce single-use plastics and further promote sorting and recycling of plastics, “marine runoff countermeasures” to prevent plastics from being scattered and spilled, and “partnership and collaboration” to work with citizens and businesses to accelerate plastic countermeasure efforts.

To elaborate, Yokohama City has seven policies and 35 specific initiatives (actions) to implement the three priority strategies. The policies for resource recycling include thorough control of plastic generation and reuse (Measure 1), thorough collection and proper disposal of plastics (Measure 2), and efforts to promote innovation and conversion to alternative materials (Measure 3). Further, the measures to prevent marine runoff include prevention of marine runoff caused by littering and illegal dumping (Measure 4) and collection of scattered plastics (Measure 5). There should be coordination and collaboration between related parties to promote efforts (Measure 6), understand the actual situation, and enhance scientific knowledge (Measure 7).

The next section discusses the 35 actions. Table 1 shows the relationship between these 35 actions and the seven policies described above. The breakdown of related measures in specific initiatives is as follows: Measure 6 has the most actions, with 22, followed by Measure 2 with 16, Measure 1 with 12, Measure 4 with 8, Measure 5 with 7, Measure 3 with 6, and lastly, Measure 7 with 5.

To promote the initiatives of Measure 6, which is the most common, through cooperation and collaboration with related parties, and to ensure the collection and proper disposal of plastics in Measure 2—which is the next most common—and to reduce the generation and reuse of plastics in Measure 1 through public relations and educational activities for citizens and businesses, and through industry-academia-government collaboration, reduce the use of single-use plastics, reduce the use of and implement actions to promote the reduction of plastic generation, and ensure proper disposal, ranging from thorough separation of plastic containers and packaging, promotion of plastic recycling, and promotion of the use of products made of recycled materials.

In “Measure 4: Prevention of oceanic runoff due to littering and illegal dumping,” and “Measure 5: Collection of scattered plastics,” the goal is to reduce the amount of plastic litter in the city and prevent oceanic runoff by working with businesses to curb plastic generation by reducing the use of one-way

plastics and promoting the use of “My Bags,” and by making citizens and businesses aware of the connection between littering, illegal dumping, and ocean pollution.

To promote innovation and shift from plastic to alternative materials in Measure 3, the government will promote the introduction of biomass materials to plastics that have to be incinerated, such as garbage bags; promote innovation through corporate collaboration to solve plastic issues; and promote and educate the public about plastic alternatives, such as plastic-free items, recycled materials, and biomass plastics.

Table 1. 35 specific initiatives (actions) and related measures

Attempt	Contents	Related measures
1	Publicize and educate citizens in familiar places (storefronts, local events, etc.) about reducing the use of single-use plastics, promoting the use of products made from recycled materials and alternatives, and ensuring thorough separation for recycling.	1 · 2 · 3 · 6
2	Educating visitors to city-related facilities about anti-plastic measures, such as reducing the use of single-use plastics and promoting the use of products made from recycled materials and alternatives.	1 · 2 · 6
3	Raise awareness of the use of reusable tableware and furniture to reduce the use of single-use plastics.	1 · 6
4	Thorough implementation of green purchases based on the “Yokohama City Basic Policy on the Promotion of Green Purchasing.” (1)	1
5	In principle, prohibit the use of single-use plastic at meetings held in the city’s government buildings and promote the reduction of its use at other meetings and events.	1
6	Promotion of recycling through initiatives by city employees to reduce the generation of plastics and thorough separation of plastics, and the use of products made from recycled materials and alternatives.	1 · 2
7	Encourage businesses to reduce the generation of plastic by reviewing excessive plastic packaging and switching to alternative materials.	1 · 6
8	Lobbying the government to create a system to ensure the 3Rs of plastics.	1 · 2 · 6
9	Utilization of the “Voluntary Waste Management Program” by Kanagawa Prefecture and the ordinance-designated cities in Kanagawa Prefecture to promote the 3Rs of plastics discharged by businesses.	1 · 2 · 6
10	Implementing campaigns, etc. in cooperation with businesses, such as reducing the use of single-use plastic and promoting the use of shopping bags.	1 · 2 · 3 · 4 · 5 · 6
11	Strengthen information dissemination, such as introducing the current status of the plastics problem and examples of plastics countermeasures taken by citizens and businesses.	1 · 2 · 3 · 4 · 5 · 6
12	Information sharing, dissemination, educational activities, etc. in cooperation with companies, research institutes, universities, and government agencies (national government, etc.) related to the ocean.	1 · 2 · 3 · 4 · 5 · 6
13	Publicity and awareness-raising for thorough sorting of plastic containers and packaging, including introduction of examples of difficult-to-understand sorting.	2 · 6

14	Promote recycling of small home appliances through publicity and education to increase the amount of plastic recycled.	2・6
15	Promotion of proper disposal of plastics contained in commercial waste by thorough inspection of incoming materials at incineration plants.	2
16	To grasp the actual situation and study measures to promote the recycling of plastics discharged by businesses.	2・7
17	Promotion of effective use of difficult-to-recycle plastics discharged by businesses through heat recovery.	2
18	Support for the promotion of waste separation through the Y-PORT project. (2)	2・6
19	Support through the African Clean Cities Platform.	2・6
20	Establishment of a platform for public-private partnerships in the waste sector.	2・6
21	Promote the introduction of biomass materials into plastics that must be incinerated, such as garbage bags.	3・6
22	Promote innovation and raise awareness of alternative materials to solve plastics issues.	3・6
23	Prevention of plastic products and plastic waste scattering in operations under its jurisdiction, including facility management.	4
24	Promotion of publicity, awareness-raising, etc. to make people aware of the link between littering and illegal dumping and marine pollution.	4・6
25	Promotion of prevention of plastic waste scattering from collection points by using folding net boxes, etc.	4・6
26	Provide guidance to businesses to ensure that plastic scattering is prevented.	4
27	Conduct publicity and awareness-raising activities in cooperation with other cities and organizations.	4・6
28	Further promotion of city beautification and clean-up activities.	5・6
29	Promote road and river beautification and cleanup activities.	5・6
30	Further promotion of beach beautification and cleanup activities.	5・6
31	Collection of plastics and other marine debris.	5
32	The survey of single-use plastics in burnable trash.	7
33	Study of survey methods and actual conditions of biomass plastics in burnable waste.	7
34	Investigation of environmental pollution, etc. in rivers and oceans caused by plastics.	7
35	Survey of microplastic content in wastewater from sewage treatment facilities, waste treatment facilities, etc.	7

1. Green Purchasing is based on the Green Purchasing Law (Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities: enacted in 2001), which mandates the procurement of eco-impact). Local governments are obligated to make efforts, but are required to formulate procurement policies, and are required to establish procurement policies, set targets, and implement procurement based on the policies.

2. This project is an international technical cooperation between public and private sectors, which utilizes Yokohama's resources and technology. This is a project in which the city of Yokohama provides technical cooperation to emerging economies by promoting partnerships that utilize the urban development know-how it has cultivated and the environmental technologies possessed by companies in the city.

(Source) In charge of Y-PORT, International Cooperation Division, City of Yokohama [2019], "Introduction to the Y-PORT Project," Yokohama City website.

(<https://www.city.yokohama.lg.jp/business/kokusaikoryu/yport/yport/>)

In "Measure 7: Identification of actual conditions and enhancement of scientific knowledge," local governments will conduct surveys on the status of recycling of plastics by businesses. They will also conduct surveys on single-use plastics mixed into burnable garbage in household garbage, microplastics, and plastic waste in coastal areas and rivers, microplastic content in inflow and discharged water from sewage facilities, etc., and make use of the results in plastic countermeasures. We will conduct surveys of the content of microplastics in sewage facilities and promote research on the effects of environmental pollution caused by plastics, and make the most of these findings in our plastics countermeasures.

Moreover, Yokohama's 35 actions include reducing the use of single-use plastics, conducting a survey on one-way plastics, and green purchasing of products made of recycled and other materials. These concerns should be addressed by the local governments and citizens alike.

There are actions that Yokohama citizens and businesses can execute to check the plastic content, such as reducing plastic generation by reviewing excessive plastic packaging and switching to alternative materials; campaigns in cooperation with businesses to reduce the use of single-use plastic and promote the use of My Bags; and public relations and educational activities to ensure thorough separation of plastic containers and packaging, such as introducing examples of difficult-to-understand separation of containers and packaging.

In addition to these efforts, the Yokohama and its employees take initiatives to promote the reduction and recycling of plastics by encouraging the government to establish a system of 3Rs of plastics; in principle, prohibiting the use of single-use plastics at meetings held in government buildings; promoting the reduction of plastic use at other meetings and events; taking initiatives to reduce the employees' generation of plastics; promoting thorough sorting and recycling; and promoting the use of products and alternatives made from recycled materials. The Yokohama city officials will take the lead in promoting plastic reduction and recycling.

In addition to measures against plastic discharge in ocean bodies, such as thorough prevention of plastic scattering, further promotion of beautification and clean-up activities along roads, rivers, and beaches, and actions to achieve zero emissions of marine plastics are being implemented through collecting plastics that have been discharged or are drifting in the ocean.

Finally, Yokohama City, which has many tourist attractions at its waterfront area, faces the challenge of making tourists aware of the marine plastic problem. Creating an environment where people are less likely to litter by promoting city beautification activities, beach beautification, and cleanup activities, it will be an action implemented by citizens and tourists alike. This makes beautification activities important for tourists. In addition, the promotion of public relations and information awareness for environmental

tourists of the connection between littering, illegal dumping, and marine pollution is a laudable venture; however, the challenge is to effectively inform the tourists.⁷

3. Efforts by Hadano City (inland municipality) and Hakone Town (mountainous municipality)

(1) The case of Zero plastic waste in Hadano City

Hadano City is located in the midwestern part of Kanagawa Prefecture at the foot of the Tanzawa Mountains and has a population of 164,000 (as of August 2020). The Kaname River flows through the city, joined by the Kuzuha River (Kaname River system), the Mizunashi River, also from the Kaname River system, and the Muro River. These rivers merge in Hadano City and flow out to Sagami Bay.

Hadano City, in support of the “Kanagawa Zero Plastic Waste Declaration,” requests its citizens to cooperate in the “proper discharge” of plastic containers and packaging and in “reducing discharge” through the use of My Bag, My Bottle, and My Chopsticks. According to the material “How to Separate and Dispose of Garbage and Resources” released by Hadano City, plastic containers and PET bottles have to be discharged separately.⁸

The following is the procedure for sorting and discharging plastic containers and plastic bottles. The first, packs, cups, plastic bottles, trays, nets, plastic bags, wraps, plastic tubes, Styrofoam buffers, plastic labels, PET bottle labels, and caps used for packaging products with plastic labeling marks (identification marks) are collected, lightly washed with water, and disposed of transparent or translucent bags. According to a survey conducted by Hadano City on the composition of household combustible garbage, it is clear that household combustible garbage contains a large quantity of plastic containers and packaging that can be recycled. Therefore, the city has been trying to inform its citizens of the garbage sorting.

For PET bottles, those with identification marks of PET bottles for beverages were subject to the program. After sorting the PET bottles into three categories (bottle, cap, and label), the bottles were washed with water, lightly crushed, and discharged in a clear or semi-transparent bag. Caps and labels were discharged into the container plastic. Furthermore, in addition to resource collection, resource stock houses were set up at the Environmental Resource Center, some community centers in the city, and two districts in the city. Resource materials such as plastic bottles and containers could be brought in by the citizens themselves.⁹ Stock houses are steel houses with doors to prevent resource materials from being scattered or taken away (see Figure.3).



(Source) Hadano City [2017], p. 14.

Fig.3. Hadano City's resource stock houses

(Left: Environmental Resource Center, Right: Honmachi District)

Additionally, Hadano City has implemented the cooperative store system for the in-store collection of recyclables. The store cooperates in the collection of recyclable materials, such as plastic bottles and plastic containers. Therefore, citizens can discharge recyclables when shopping. As of August 2020, there are 12 cooperating stores, of which eight collect plastic bottles, five collect plastic containers and packaging, and 10 collect food trays.

Next, there is the “Hadano City Ordinance on Prevention of Littering,”. According to this ordinance, it is forbidden to throw garbage into streets, squares, parks, rivers, or other public places, onto other people’s land without permission, or to pollute them with feces from animals kept there. Violators will be fined up to JPY20, 000.

Regarding measures for city beautification, the city promotes the creation of a litter-free city through the “Volunteer Cleanup Campaign,” in which citizen volunteers are recruited to regularly clean up streets, rivers, and other public areas. The “Early Morning Garbage Zero Cleanup Campaign” regularly conducted in front of the four stations of the city, and the “Simultaneous Citywide Cleanup,” in which many citizens participate, are organized by the Hadano City Federation of Residents’ Association.

Although Hadano City has not formulated a zero-garbage declaration action program like Kanagawa Prefecture and Yokohama City, it conducts composition surveys of household combustible garbage, thoroughly separates recyclable materials from combustible garbage, installs resource stock houses, and collects resources at stores that cooperate in the collection of recyclable materials. In addition, the city has been proactively working to prevent littering since before the Kanagawa Zero Plastic Waste Declaration, including engaging in volunteer cleanup activities, early morning garbage-free cleanup campaigns in front of stations, and city beautification through simultaneous citywide cleanups.

(2) The case of Hakone Town’s zero-plastic waste

Hakone Town is located in the mountains of southwestern Kanagawa Prefecture, and there are many tourist attractions throughout the town, including hot springs (lodging and daytime hot spring facilities)—such as Hakone-Yumoto and Moto-Hakone, Owakudani, Hakone Ropeway, Lake Ashinoko—and several museums. It is a tourist city with a population of less than 11,000 (July 1, 2020). In the town, the Hayakawa River originates from Lake Ashinoko and flows out to Sagami Bay; the Sukumogawa River joins the Hayakawa River.

Hakone Town is one of the municipalities that endorses the “Kanagawa Zero Plastic Waste Declaration,” although it has not formulated a zero waste declaration action program of its own. Hakone Town has been implementing various measures to realize “Environmentally Advanced Tourist Attraction - Hakone” since FY2009 to “achieve the goal of becoming a sustainable tourist destination with universal value, which is regarded as a target by the world.”¹⁰ The initiatives for FY2017 through FY2021 include four promotion items: (1) related to the creation of a low-carbon tourist destination; (2) related to low-carbon urban development through collaboration among residents, businesses, and the government; (3) related to the use of renewable energy; and (4) related to the absorption of greenhouse gases. To promote waste reduction and resource recovery, item (2) applies, and the companies are implementing a campaign for the proper discharge of paper and plastic containers and packaging, which are often mixed with combustible waste. Another campaign that is gaining traction is a campaign to reduce food loss.

According to Hakone Town’s “Guide for Separating and Disposing of Resources and Garbage,” plastic containers and plastic bottles are separated during discharge. For PET bottles, those displaying the

identification mark of PET bottles for beverage use were subjected to this program, and three types of separation of PET bottles were implemented.

Plastic containers and packaging include trays with plastic labeling marks (identification marks), cups and bottles, tubes, packaging, caps and labels mentioned above, and packaging materials (Styrofoam). When discharging these materials, they are washed lightly with water, placed in a transparent or semi-transparent bag, and discharged into a shatterproof net at the resource collection point.

In addition, Hakone Town calls on tourists to remove garbage, including plastic waste, as it is a tourist destination. Therefore, the “Tourism Beautification Patrolling Party” is conducting a campaign to take back garbage. This patrolling party was established in March 1970 when Hakone Town declared itself a “Tourism Beautification Promotion City” in October of the same year. The patrol conducts beautification cleanups at major tourist areas and hiking trails, and regularly conducts educational activities for tourists.

Furthermore, in October 2001, the “Hakone Town Clean-up Ordinance (Littering Prevention Ordinance)” came into effect, prohibiting “the dumping of waste onto roads, rivers, squares, parks, lakes, marshes, and other public places without permission (Article 8).” The ordinance applies not only to residents and businesses in the town but also to non-residents—tourist travelers, those commuting to and from the town, and those staying in or passing through the town.

Article 4 of the ordinance stipulates that town stayers are responsible for preventing the littering of empty cans, cigarette butts, and other wastes, by taking home empty cans, cigarette butts, and other wastes that they have generated outside their homes or by placing them in collection containers. To prevent littering, town stayers are required to take home beverage containers or to place them in collection containers. In this manner, Hakone encourages tourists to beautify the town, curb waste emissions, and engage in proper emission behavior. In addition, hotel industry professionals in the town conduct a simultaneous cleanup of the town called the “Hakone Clean Operation” along the shores of Lake Ashi and around each hotel before the summer season in July every year.

4. Zero Plastic Waste Policy to Reduce Marine Litter

Thus far, this study has examined the measures taken by the three municipalities to reduce plastic waste. This study also organized some of the measures to reduce the amount of marine debris. The first is Yokohama City’s measure of reducing the use of single-use plastics. This requires encouraging consumers to change their behavior and, if necessary, the cooperation of businesses (producers and retailers). In June 2009, Yokohama City collaborated with the Aeon Group to conduct a plastic waste reduction campaign as part of an educational campaign to reduce single-use plastics. To reduce disposable plastic straws and bottles, use my own bottle, reduce plastic tableware (forks and spoons), use my own chopsticks, reduce plastic bags, and use shopping bags campaigns were launched.

The next step was to strengthen the separation of plastics. Yokohama City, Hadano City, and Hakone Town have separated plastic containers and bottles for plastic waste disposal. PET bottles displaying the identification mark of PET bottles for beverage use are subject to this rule, and PET bottles are separated before discharge. Caps and labels are discharged into the container plastic.

Furthermore, under Hadano City’s system of cooperating stores for in-store collection of recyclable materials, it will be disposed of properly under the responsibility of the stores. This measure could lead to more stores switching to selling products that are less wasteful and easier to recycle, curbing excessive packaging, and changing the way they sell their products.

Finally, as a measure against marine plastics, in addition to measures to prevent plastics from being discharged into the ocean—such as thorough prevention of plastic scattering and promotion of town beautification and cleanup activities—it is also important to collect plastics discharged into the ocean from floating debris. Municipalities facing the sea, such as Yokohama City, need to beautify ports and beaches and conduct cleanup activities. Inland and mountainous areas also need to prevent plastics from flowing out of rivers and into the ocean, through community beautification and cleanup activities. For example, Hadano city conducts volunteer activities to regularly clean streets, rivers, and other public places that are dirty, as well as an early morning garbage zero cleanup campaign in front of the station and a citywide beautification cleanup, making it important to clean up the city to combat marine plastics.

Conclusion

This paper discussed Kanagawa Prefecture's Zero Plastic Waste Declaration and the measures taken by local governments in agreement. In the policies of each municipality, citizens and businesses work together to reduce plastic waste by reviewing their lifestyle habits. Citizens take responsibility for plastic waste by separating plastic bottles into three types; the government takes responsibility for plastic waste disposal by implementing the Containers and Packaging Recycling Law; and dealers assume business responsibility for plastic waste by engaging in in-store collection of plastic, and conduct town beautification and cleanup activities with the cooperation of businesses and citizens.

Kanagawa Prefecture has many tourist cities, and while some municipalities such as Hakone town encourage tourists to take their garbage home with them, the effectiveness of encouraging methods (such as educational activities) is limited in places with irregular traffic. Therefore, consideration should be given to using non-statutory taxes, such as tourism tax, to pay for various expenses, such as cleanup activities.

NOTE

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Annotation

- ¹ The national government selected 29 municipalities in Japan that are making excellent efforts to achieve the SDGs as SDGs Future Cities, and among them, 10 cities that are particularly leading the way were selected as SDGs Model Projects. Kanagawa Prefecture was selected as both an SDGs Future City and the model projects.
- ² The three cases covered by the Action Program are those in which plastic waste is left in the wild and considered a potential source of marine pollution.
- ³ One-way plastics are plastic containers and packaging materials that are used only once and then discarded without being recycled. Single-use plastics is the commonly used term.
- ⁴ Kanagawa [2020], p. 9.

- 5 Zero emission means zero discharge, and in the Yokohama Action Program, it means zero discharge of plastic waste into the ocean.
- 6 Yokohama City Bureau of Recycle and Resources [2019], p. 12.
- 7 According to a survey on street smoking and littering by Yoshiyuki Nobusawa and Shusaku Yamaya [2007], it was confirmed that the effects of encouraging methods are difficult to show in places with many irregular pedestrians such as downtown areas, and the effects of educational activities for tourists can be considered limited.
- 8 Hadano [2019], “Containers and Packaging Plastic and Plastic Bottles [Every Other Wednesday],” How to Separate and Dispose of Garbage and Resources, Hadano City Web Site (<https://www.city.hadano.kanagawa.jp/www/contents/1001000004375/index.html>).
- 9 The resources that can be brought into the stock vary from house to house. For more information, see Hadano [2020].
- 10 Hakone Town [2016], p. 1.

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