

# Recycling status of retailers

# Recycling status of welfare organizations



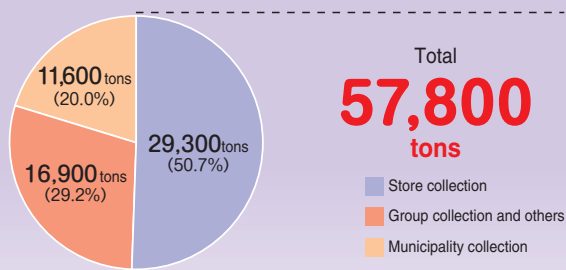
Storefront collection boxes such as those at supermarkets collect a large volume of paper cartons.

Storefront collection boxes such as those at supermarkets collect more than 50% of paper cartons collected from households.

Store collection figures are based on data published by each member corporation of the Japan Chain Stores Association (JCSA), the Japanese Consumers' Cooperative Union (JCCU) and each of its member corporations, and our independent survey. The volume of store collection in 2016 was 29,300 tons. This was a decrease of 1,100 tons from the previous year.

Aligned with changes in the form of retail stores, the survey also covered a part of drug stores.

Household paper carton collection volume by collection type (estimated value)



## We are working to recycle!

### AEON Co., Ltd.

(Headquarters: Mihama Ward, Chiba City)

**Activity example**

AEON is a retail corporate group with 520,000 employees, operating in 13 countries. In Japan, it has approximately 17,000 stores and offices including general merchandise stores, supermarkets, convenience stores and shopping malls.

Aeon formulated the Aeon Sustainability Principle in 2011 to help realize a sustainable society by cooperating with various stakeholders. Aeon stores installed collection boxes for used paper cartons, food trays, aluminum cans and plastic bottles. They started collecting paper cartons from 1991, and 4,652 tons were collected from 26 companies in the group in fiscal 2016. Aeon recycles part of the collected paper cartons and makes own brand toilet rolls using 100% recycled paper pulp.

For the purpose of promoting resource recovery and improving convenience for customers, new machines (for collecting used paper, paper cartons, and plastic bottles) were installed in some stores to provide WAON electronic money points to customers who contribute to resource recovery. 1 WAON point is awarded for every ten 1L paper cartons (300g) collected.

By collecting resources including paper cartons, the stores function as local resource circulation bases. The stores will continue to live up to the expectations of customers and the community.



Automatic collection machine of plastic bottles and paper cartons  
\* Located in four Aeon Malls

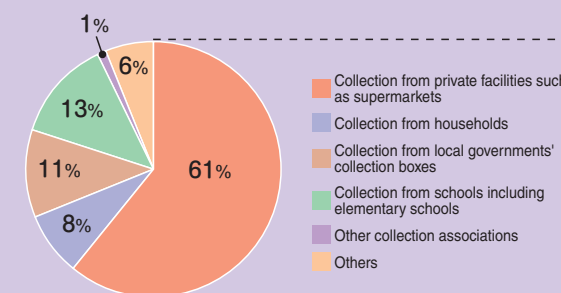


Used paper collection machine that provides WAON points

Collection sources of welfare organizations are wide-ranging.

Welfare organizations mainly collect used paper cartons from collection boxes at supermarkets. Their other collection sources are schools including elementary schools, collection boxes at local government offices, and residential homes. Many organizations deliver paper cartons that they collect or receive mainly to paper recyclers.

Split of paper cartons collected by welfare organizations by collection source



## We are working to recycle!

### Self-reliance support facility

#### Ainosato

(Aizuwakamatsu City, Fukushima Prefecture)

**Activity example**

Ainosato, a self-reliance support facility was established in October 1986 as a place for people with disabilities who could not commute to the first commuting-type vocational aid facility opened in April the same year. In October 2008, it switched to a Continuous Working Support Institution of Type B. Currently, 21 users commute to this facility. Since its establishment, the users working for this facility have been collecting used paper cartons and making postcards and business cards, and the institute has been providing the earnings to the users as wages. They started this work process because any user can participate in any tasks in this process, and furthermore, the initiatives allow the facility to promote itself to the public as an "eco-friendly, recycling-oriented facility."

They started to collect used paper cartons from nearby private residences, using a trolley more than 30 years ago. Now, they have been collecting paper cartons, by truck, from supermarkets, private residences and company offices in four municipalities near Aizuwakamatsu City about three times a week. The students at six elementary schools and junior high schools inside and outside the city who have been collecting used school milk cartons by washing, opening and drying as part of environmental education were in trouble once as paper recyclers were no longer available to visit schools to pick them up. The facility decided to start collecting their used cartons on a regular basis to support recycling-focused education.

In addition, the facility has been receiving about 150 kg of paper cartons collected by all the employees of Aizu Shinkin Bank every year for more than 10 years. From the paper cartons collected, they select ones that are easy to process and use them as materials. The rest are handed over to used paper recyclers (approx. 8.5 tons in 2016). The earnings and the financial incentive for collecting resources provided by Aizuwakamatsu City are paid as wages to the users.

From now on, they are going to work on improving production efficiency through enhancing equipment in order to use as many collected paper cartons as possible and on developing new products, taking costs into account.



Task of tearing paper cartons by hand



A user focusing on making paper from recycled pulp

# Status of municipality collection and group collection



Almost 90% of local governments are collecting paper cartons.

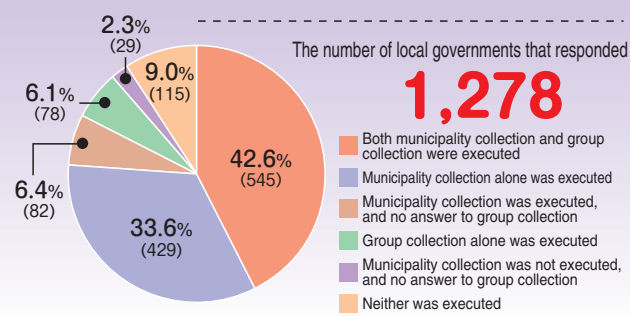
Among the 1,741 municipalities in the country, we have sent questionnaires to 1,736 local governments in fiscal 2016 excluding five areas that have been affected by the Fukushima nuclear accident. We received responses from 1,278 municipalities. The total population of municipalities that responded to this survey made up 88.8% of the total population in Japan.

Used paper carton collection by municipalities and unions is classified as "municipality collection," and collection carried out by citizen's groups (registered to respective municipalities) is classified as "group collection."

The execution rates of municipality collection and group collection were about the same as those of the previous fiscal year; the municipality collection was 83%, and the group collection excluding cases where no answers were received was 53%\*. Either municipality collection or group collection was executed in 89% of the municipalities. This means that almost 90% of local governments are collecting paper cartons.

\* Execution rate of group collection = (both municipality collection and group collection were executed + group collection alone was executed) / (the number of local governments that responded - the number of local governments that did not answer) x 100 (%) = (545 + 78) / (1278 - (82 + 29)) x 100 % = 53%

## Execution rate of municipality collection and group collection



20,200 tons of paper cartons were collected through the municipality and group collection.

The survey estimated by splitting the municipality collection volume and group collection volume into four city types: "general cities," "ordinance-designated cities," "Tokyo special wards" and "towns and villages." In fiscal 2016, the municipality collection volume was 11,600 tons, and the group collection volume was 8,600 tons. Total collection volume was 20,200 tons.

Per capita collection volume (basic unit) of municipality collection was larger in towns and villages and general cities, and smaller in ordinance-designated cities and Tokyo special wards. Group collection was larger in general cities and ordinance-designated cities. Aggregated per capita collection volume was larger in both general cities and towns and villages, and smaller in big cities including ordinance-designated cities and Tokyo special wards.

We must study and develop action plans unique to the given regions to collect more paper cartons.

## Estimated collection volume from municipality and group collection by city type

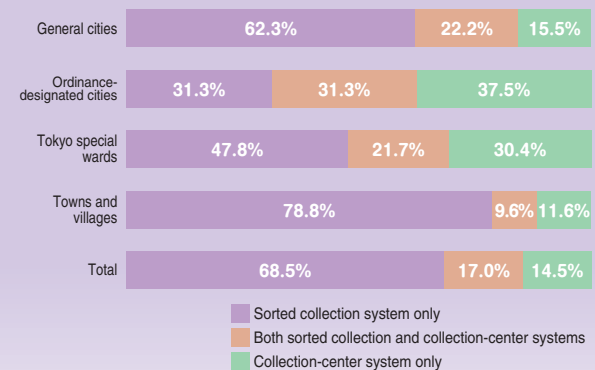
	Total	General cities	Ordinance-designated cities	Tokyo special wards	Towns and villages
<b>Municipality collection</b>					
Estimated volume (1,000 tons)	11.6	8.5	1.0	0.7	1.4
Ratio of estimated collection volume by city type	100%	73%	9%	6%	12%
Per capita collection volume (grams)	91	106	38	72	123
<b>Group collection</b>					
Estimated volume (1,000 tons)	8.6	6.1	1.7	0.2	0.6
Ratio of estimated collection volume by city type	100%	71%	19%	2%	7%
Per capita collection volume (grams)	67	77	61	20	54
<b>Total</b>					
Estimated volume (1,000 tons)	20.2	14.7	2.7	0.8	2.0
Ratio of estimated collection volume by city type	100%	72%	13%	4%	10%
Per capita collection volume (grams)	158	183	100	92	177
Population by city type (millions)	128	80	27	9	11

\* Some figures may not add up to the total due to rounding.

Municipality collection of paper cartons is executed by the sorted collection system and the collection-center system.

Used paper cartons are collected in two ways in each municipality. One is the sorted collection system, and the other is the collection-center system. The sorted collection system refers to collection from each household and the area's collection points, and the collection-center system refers to collection from collection boxes installed at community halls and similar locations. By city type, the sorted collection system is more widely executed by general cities, towns and villages, and the collection-center system is executed more in the ordinance-designated cities and Tokyo special wards.

## Ratio of executed collection system by city type



## We are working to recycle!

### Itabashi Ward, Tokyo

#### Activity example

Itabashi Ward is located in the northern part of Tokyo. Approximately 560,000 people live there, and its slogan is "Itabashi' Where Greenery and Culture, Which Develop the Future, Thrive." The name "Itabashi" appears in Japanese history as the place where Mr. Minamoto no Yoritomo arrayed for the battle in the Kamakura Period (1185 - 1333). Itabashi Ward has collected paper cartons in 257 locations in total, including 118 ward facilities, 65 municipal schools, two community facilities, 13 public apartments, and 59 private facilities (as of April 1st 2017). Combined with group collection, the collection volume of paper cartons was 42.4 tons in fiscal 2016. This means that the per capita collection volume (basic unit) was 77 g per person, which was ranked approximately average among 23 wards.

On the other hand, a large volume of used papers had been mixed in the burnable garbage collected in 21,500 collection points within the ward in the past. Therefore, in order to reduce the waste and increase the used paper recycling rate, the ward started clearly indicating and collecting "paper cartons" and "paper boxes, paper bags, and photocopying papers" at the collection points on April 1st 2016. Used papers collected as resources once a week is gathered, sorted and recycled.

According to the COMCEI's estimate, the rate of paper cartons mixed with burnable garbage in other municipalities was about 0.5%. Applying the rate to approx. 100,000 tons, which is the annual collection volume of burnable garbage in Itabashi Ward, we can expect that per capita collection volume increases substantially if even only a portion of paper cartons mixed with burnable garbage are collected as resource.



Recyclable waste at a collection point



Collection boxes installed in a ward office



# Recycling status at schools

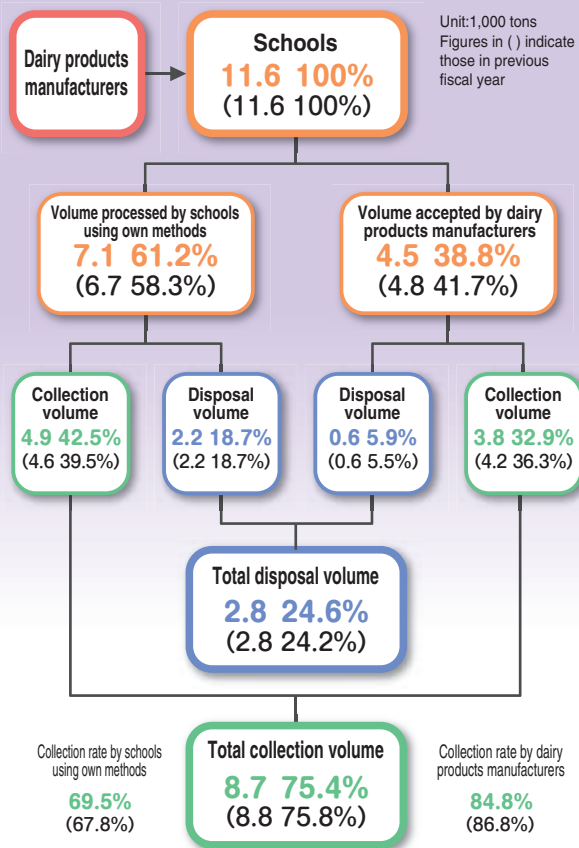
# Recycling status of paper manufacturers



Recycling of milk cartons used in school meals also continues increasing.

Approximately 11,600 tons of milk cartons used for school meals were supplied in fiscal 2016, which was roughly the same amount as in the previous year. Out of the total supply, 8,700 tons of paper cartons were collected for recycling, and the collection rate remained high. In addition to recycling of milk cartons, elementary schools are reusing paper cartons in science and art classes as well as collecting paper cartons from students' homes.

### Material flow of milk cartons used for school meals (estimated value)



\* Processing by schools using own methods refers to delivery of paper cartons directly to local governments or used paper recyclers.  
\* Some figures may not add up to the total due to rounding.

## We are working to recycle!

### Minami-Alps City Shiranehyakuta Elementary School

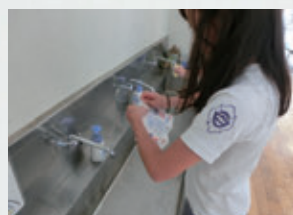
(Minami Alps City, Yamanashi Prefecture)

#### Activity example

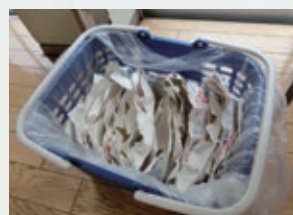
Shiranehyakuta Elementary School is located in the west of Kofu Basin, and you can get a whole panoramic view of Mt. Fuji in the south behind the school playground. The school district contains orchards of peaches, cherries, prunes and grapes. In this rich natural environment, the school has an educational goal of "Be Intelligent, Kind and Strong, Love Hometown and Develop Dream," and 353 students enjoy learning.

All children at this school have been recycling milk cartons used for school meals since around 2001. In April and May every year, sixth graders supervise first graders learning the recycling procedure. At lunch time, each student takes an empty paper carton to the sink in the hallway, opens up the top of carton, rinses the carton with water, and disassembles and stacks it in a basket in front of the classroom to let it dry. Paper cartons put in a basket to dry the day before are transferred to another basket for collection before lunch time. Every Friday, fourth graders collect and store the collected paper cartons from all classrooms. Stored paper cartons are collected by Yamanashi Shigyo twice a month and recycled into toilet rolls.

Putting a lot of effort into environmental education, the school carries out other environment-related activities. For example, the students regularly pick up trash on their way to school with the help of their parents, teachers separate and dispose of paper waste generated in the faculty office, and the student council works on the Eco Cap program (collecting caps of PET bottles).



Disassembling a paper carton before putting it in a basket for drying

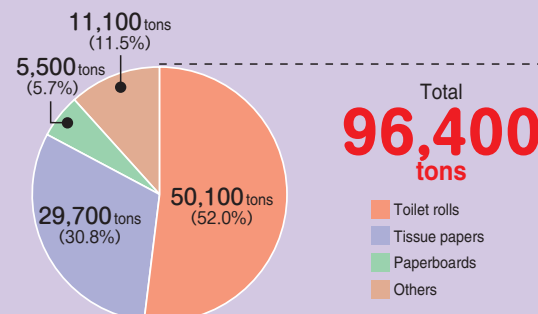


When cartons are dry, they are transferred to another collection basket

Collected paper cartons are recycled as high-quality pulp fibers.

The total volume accepted by paper manufacturers, which consisted of the collection volume of domestic paper cartons and import volume of used paper cartons and used paper in fiscal 2016 was 119,600 tons. Out of this, about 81% (96,400 tons) were recycled into toilet rolls, tissue papers, and other recycled products. Paper cartons have been used for their products as precious high-quality pulp fiber material.

### Ratio of use of accepted papers by recycled products



\* Composition ratio of fiscal 2015 was used to calculate the above.

## We are working to recycle!

### Nishinohon Eizai Co., Ltd.

(Tatsuno City, Hyogo Prefecture)

#### Activity example

Nishinohon Eizai Co., Ltd. began operation in 1963 in Tatsuno City which lies downstream of the Ibo River in Hyogo Prefecture. From the start, they have been working on promoting the environment preservation through recycling used paper, which is their motto. They built a recycling system enabling them to use the whole cardboard boxes, which contain confidential documents from companies and local governments in western Japan, without shredding as main raw material of their recycling products. They have been contributing to "environment" and "recycling" in the region by manufacturing and distributing toilet rolls produced from 100% recycled paper pulp.

As for provision of environmental education through their factory tours, they accept about a dozen groups of visitors every year, including elementary schools, junior and senior high schools in the region and the municipalities that visit the factory as local environmental and health activities. As these activities took root in the region and Nishinohon Eizai gained publicity, recently, JICA asked them to accept observation teams from abroad.

The representative said, "Now, we are promoting the 'Urban Forest Project.' Paper products discarded in our daily life are valuable resources generated from 'a Forest Called City.' We would like to keep communicating the importance of efforts made by each individual to conserve resources."



Factory tour



No. 5 Paper mill