

The 4th Fundamental Plan for Establishing a Sound Material-Cycle Society



Sustaining fundamentals for 3Rs and waste management

International resource circulation

Disaster waste management systems

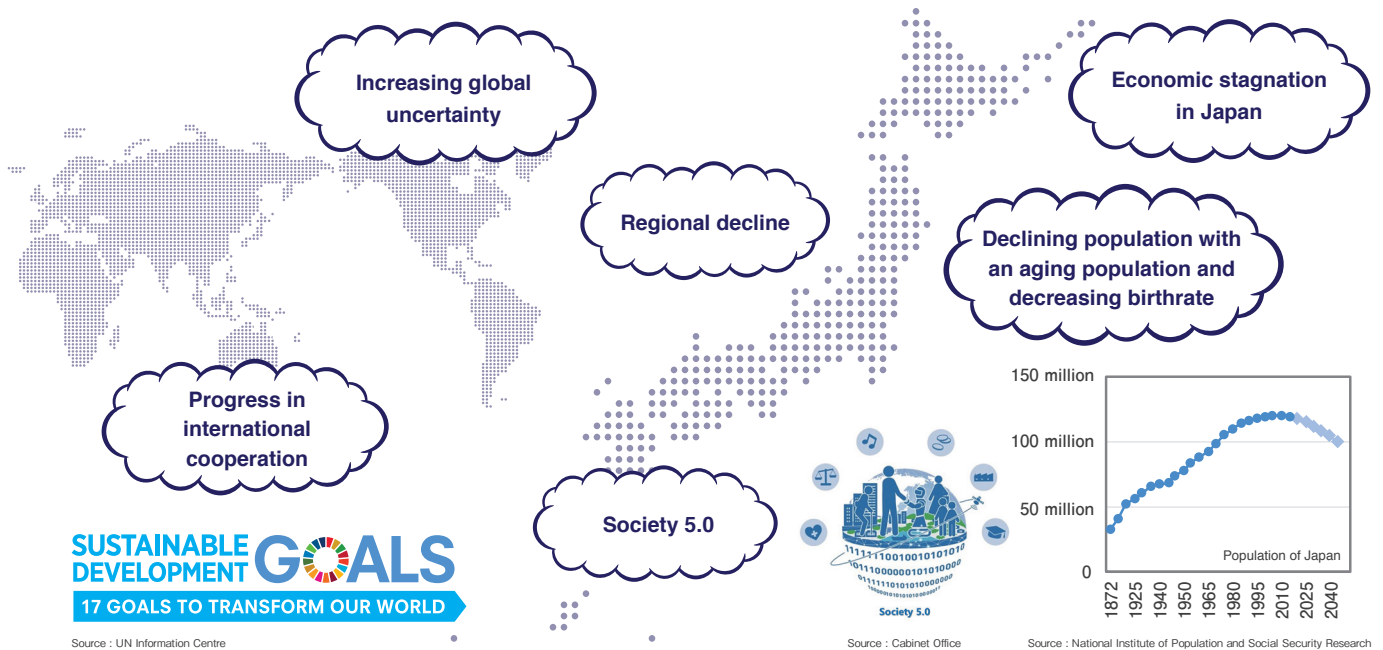
Proper waste management and
environmental restoration

Resource circulation throughout
the entire lifecycle

Regional circular and ecological sphere

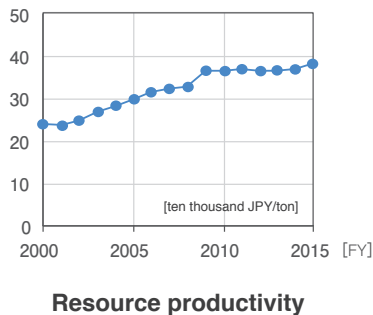
Integrated measures toward
a sustainable society





A Sound Material-Cycle Society

Current status



- Resource productivity has experienced major progress since FY2000, but has been leveling-off recently.

Resource productivity

- An indicator that comprehensively represents how effectively materials are used in industrial activities and people's daily lives, in terms of creating more wealth using fewer resources.
- The indicator was first adopted in a national-level plan in Japan.

Recent issues

- Restoration of the environment and reconstruction from radioactive contamination released by the nuclear accident
- Frequent occurrence of large-scale disasters and delays in responses
- Changes in people's perspective (from material wealth to spiritual wealth)
- Shortage of human resources for waste treatment and recycling



Issues surrounding plastic waste
Source : General Incorporated Association JEAN



Disaster waste in the aftermath of typhoons



Bike share
Source : Annual Report on the Environment, the Sound Material-Cycle Society and Biodiversity in Japan 2018



Mobile phones collected for the Tokyo 2020 Medal Project

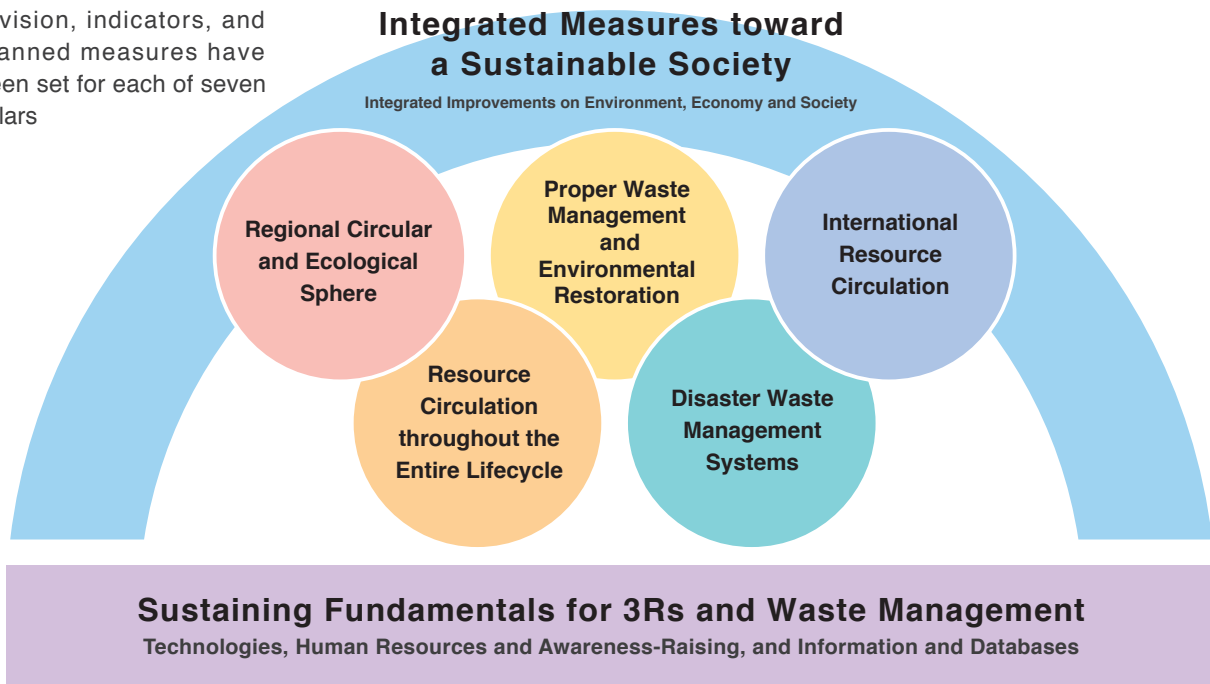
Pillars and targets of the plan

The Fundamental Plan for Establishing a Sound Material-Cycle Society

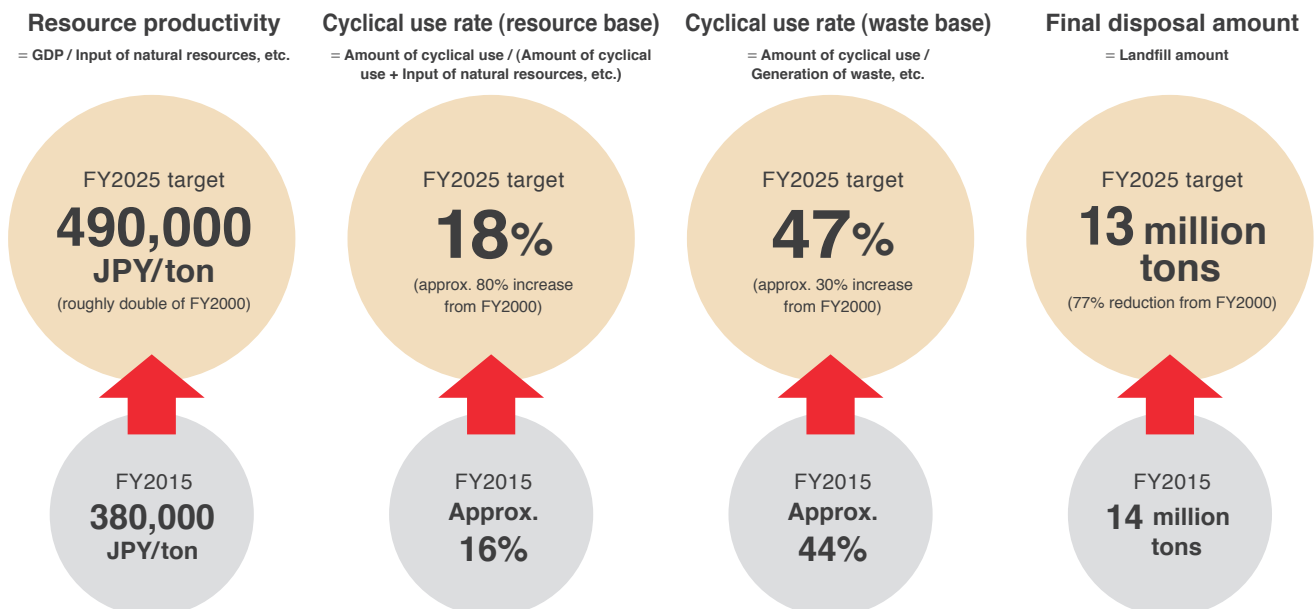
- The Plan is formulated based on the Basic Act on Establishing a Sound Material-Cycle Society (enacted in 2000), and sets a mid- to long-term direction for the establishment of a sound material-cycle society in Japan.
- The 4th Fundamental Plan, which was approved by the Cabinet on June 19, 2018, indicates measures to be implemented in a strategic manner.

Pillars of the 4th Fundamental Plan

- A vision, indicators, and planned measures have been set for each of seven pillars



Targets and indicators Four main indicators for monitoring progress





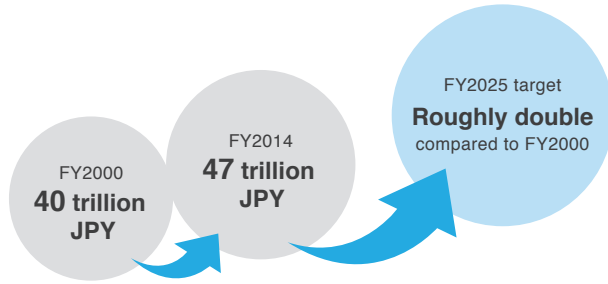
Integrated Measures toward a Sustainable Society

Vision

- A society where everyone can use natural resources in a sustainable manner
- Environmental loads restrained to within the Earth's capacity
- A safe and healthy life secured in conjunction with a rich ecosystem
- Integrated improvements on environment, economy and society

Indicators and targets

Market size of business related to a Sound Material-Cycle Society



Source : MOEJ, Results of the 3rd Progress Evaluation of the 3rd Fundamental Plan for Establishing a Sound Material-Cycle Society, 2017

SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



Source : UN Information Centre

Planned measures

- Promotion and evaluation of 2R-related business, such as sharing
- National campaign towards halving food waste from households
- Waste management system corresponding to the aging society
- Further promotion of waste energy utilization

Note : 2R refers to "reduce and reuse" out of the 3Rs (reduce, reuse and recycle)



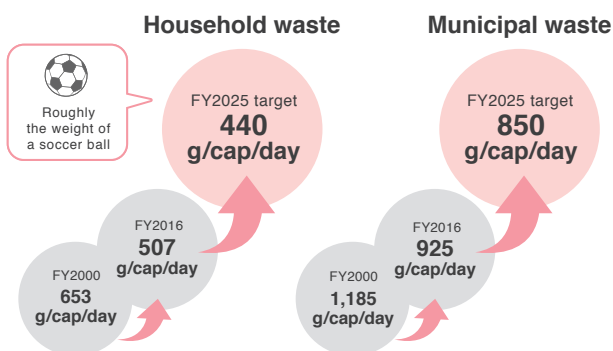
Regional Circular and Ecological Sphere (Regional CES)

Vision

- Improve local resource efficiency and vitalize local economies based on an integrated approach toward circulation, low carbon, and harmony with nature, utilizing renewable resources, stock resources, and circulative resources
- Resilient and compact city planning

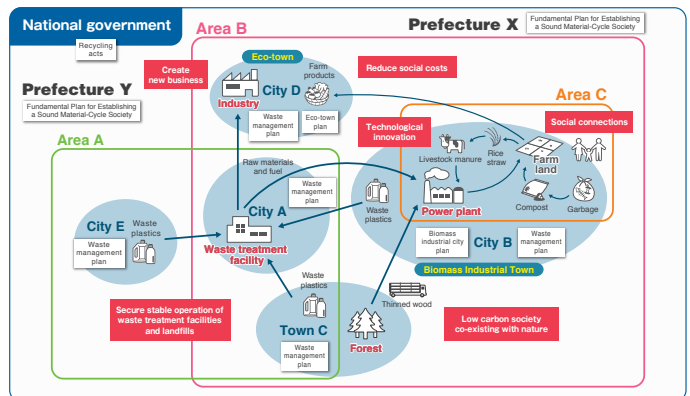
Indicators and targets

Household waste and municipal waste generation per capita per day



Source : MOEJ, 2018

Multi-layered resource circulation at an optimal scale, in consideration of regional characteristics and the nature of circulative resources



Source : MOEJ, 2016

Planned measures

- Measures aimed at the establishment of "Regional Circular and Ecological Spheres"
- Promote the local use of biomass

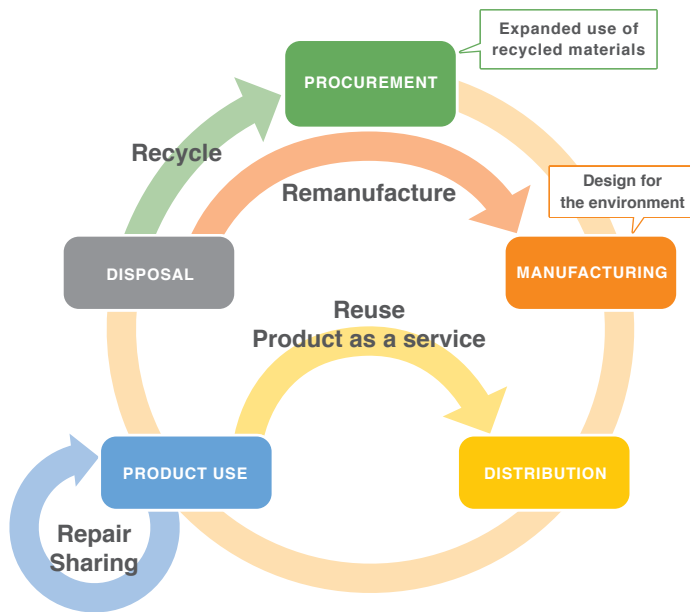
Note : Regional CES represents a self-reliant and decentralized society, making use of regional resources, and complementing and supporting one another according to unique characteristics of each region.



Resource Circulation Throughout the Entire Lifecycle

Vision

- Through the 4th Industrial Revolution, conduct resource circulation throughout the entire lifecycle by “providing the necessary products and services to the persons in need, when necessary, and in the necessary amounts.”



Planned measures

- **Strengthening upstream actions**
 - ▶ Expanded use of recycled materials, design for the environment, 3D modeling, etc.
- **Priority areas: Plastics, biomass, metals, stone/ construction materials, and recently spread products and materials.**
 - ▶ Establishment of a Plastic strategy and promotion of accompanying measures
 - ▶ National campaign to reduce food loss, measures against inappropriate recycling of food waste, and efforts toward food recycling
 - ▶ Promoting the collection and recycling of small home appliances, along with the Tokyo 2020 Medal Project
 - ▶ Reducing construction and demolition waste by strengthening buildings and prolonging their lifespan
 - ▶ Mandatory recycling system for solar power generation facilities
 - ▶ Diaper recycling

Plastic waste

Marine waste and the plastic strategy

Concerns regarding the impact of plastic pollution on ocean ecology, and a comprehensive strategy for reducing dependence on fossil resources

Global concerns regarding marine plastic pollution are rising. **Microplastics** are considered to be especially threatening, due to their potential impact on the ecosystem, as well as the fact that they are hard to collect, once released into the ocean.

Note : Microplastics are small plastic fragments with sizes smaller than 5 mm

Without significant action, by 2050 there may be more plastic than fish in the ocean, by weight

Source : The World Economic Forum, the Ellen MacArthur Foundation, and McKinsey & Company, "The New Plastics Economy: Rethinking the future of plastics," 2016.

Beach litter along the coastline

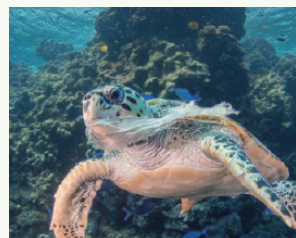


Iriomotejima, Okinawa
Source : General Incorporated Association JEAN



Goto, Nagasaki
Source : General Incorporated Association JEAN

Concerns regarding marine life



Source : UN World Oceans Day



A whale has died after swallowing more than 80 plastic bags
Source : Ministry of Natural Resources and Environment, Thailand

The plastic strategy

A comprehensive strategy for plastic material-cycling will be formulated by June 2019, for presentation at the G20 summit scheduled in Japan, and will be implemented. The following are some of the points to be covered in the strategy.

- 1 Reduce the use of plastics (e.g. single use plastic packaging) for lowering the environmental burden
- 2 Fully and efficiently collect and recycle disposed plastic resources and unused plastics
- 3 Improve and promote bioplastics to replace plastics made from fossil resources



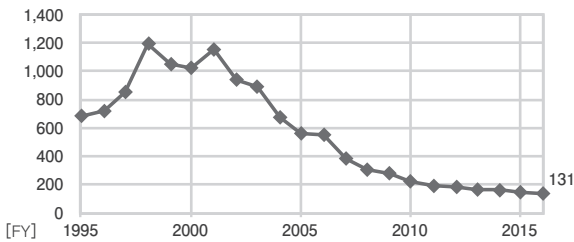
Proper Waste Management and Environmental Restoration

Vision

- A society with appropriate waste treatment systems and technologies
- A society in which the marine litter issue has been resolved, with no inappropriate disposal, and abandoned buildings properly demolished/removed
- Restoration of the environment in areas affected by the Great East Japan Earthquake, with future-oriented reconstruction

Indicators and targets

Number of illegal dumping incidents



Note : Includes incidents involving the dumping of industrial waste covered by prefectures and government ordinance cities with an amount of waste per incident larger than 10t (including all incidents with special controlled wastes). Cases involving sulfuric acid pitch and ferosilt were not included.

Source : MOEJ,2017



Waste treatment facilities as local energy centers and emergency centers



Beach cleaning activities

Planned measures

- Stable and efficient waste treatment systems
- Strengthen measures against global warming and disaster on waste treatment systems
- Waste treatment facilities that creates added value for the local community
- Restore and advance the recycling industry
- Measures against marine litter, including microplastics



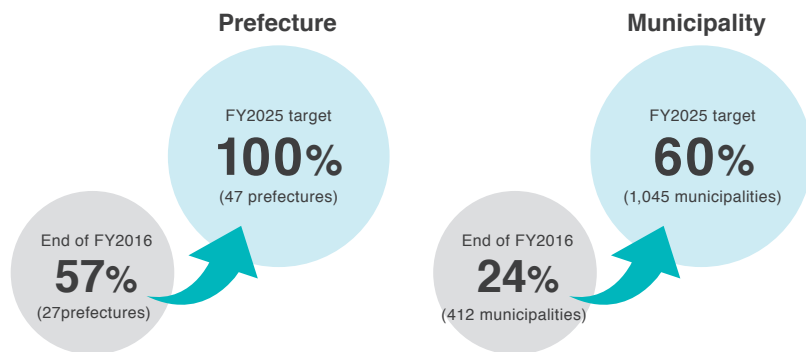
Disaster Waste Management Systems

Vision

- More resilient, multi-layered waste management systems on municipal, regional block, and nationwide levels
- Strengthen waste management systems during normal periods to enable the swift and proper treatment of waste in the event of disasters

Indicators and targets

Proportion of prefectures and municipalities with disaster waste management plans



Source : MOEJ,2018



MOEJ on-site support team at a temporary sorting site



Disaster waste in the aftermath of typhoons and earthquakes

Planned measures

- Support communication between municipalities and citizens, in order to gain cooperation from residents in times of disaster
- Hold joint training sessions, and occasions for personnel exchanges and seminars at the regional block level
- Store actual treatment/disposal data on disaster waste, and operate and maintain an information platform at the national level



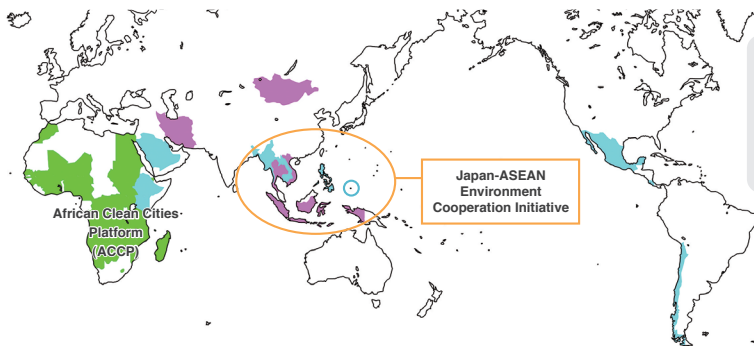
International Resource Circulation

Vision

- A resource efficient society, where a safe and healthy life as well as a rich ecosystem are secured through appropriate international resource circulation systems and international contribution of the resource circulation industries in Japan

Indicators and targets

Number of countries with a Memorandum of Cooperation on Environment Cooperation, including in the field of resource circulation



Note : Kenya and Ethiopia are also the members of the ACCP



Shipped-back scrap materials



Waste-to-energy facility constructed by a Japanese firm in Yangon, Myanmar

Planned measures

- International expansion of high-quality environmental infrastructure through a package of outstanding environmental technologies, institutions, and systems from Japan
- Provide management know-how from Japan regarding disaster waste. Coordinated scheme with JICA to support disaster-affected countries



Sustaining Fundamentals for 3Rs and Waste Management

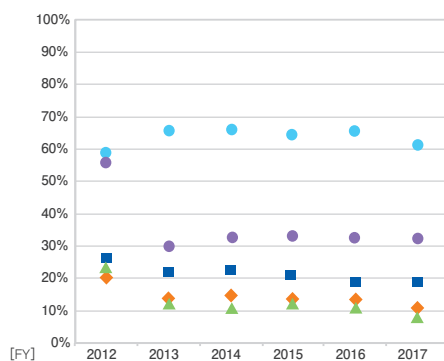
Vision

- Maintained and updated information infrastructure
- Necessary technology and human resources under continuous development
- Understanding of the role of all stakeholders in progress toward a Sound Material-Cycle Society

Indicators and targets

Implementation rate of specific 3R actions

FY2025 target: up roughly 20% from the FY2012 public opinion poll



Reduce

- Bringing a bag when shopping to avoid using plastic bags, or asking for simple packaging
- ◆ Choosing rental/leased products to avoid buying unnecessary products
- Trying to avoid wasting of food through Eco-friendly cooking or not throwing out food products that are past their expiration dates

Reuse

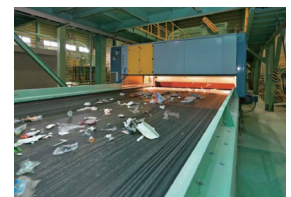
- ▲ Buying products (e.g. beer or milk) packed in reusable containers

Recycle

- Dropping unwanted small electronic devices (e.g. mobile phones) at collection points provided by cell phone retailers and home electric appliance stores

Note : Regarding the values from the FY2012 public opinion poll, although the questions and answer options for some items were not identical, comparisons were made for questions with identical or similar content.

Source : MOEJ, Questionnaire surveys on changes in thoughts and actions on establishing a Sound Material-Cycle society



Optical sorting device for waste plastics

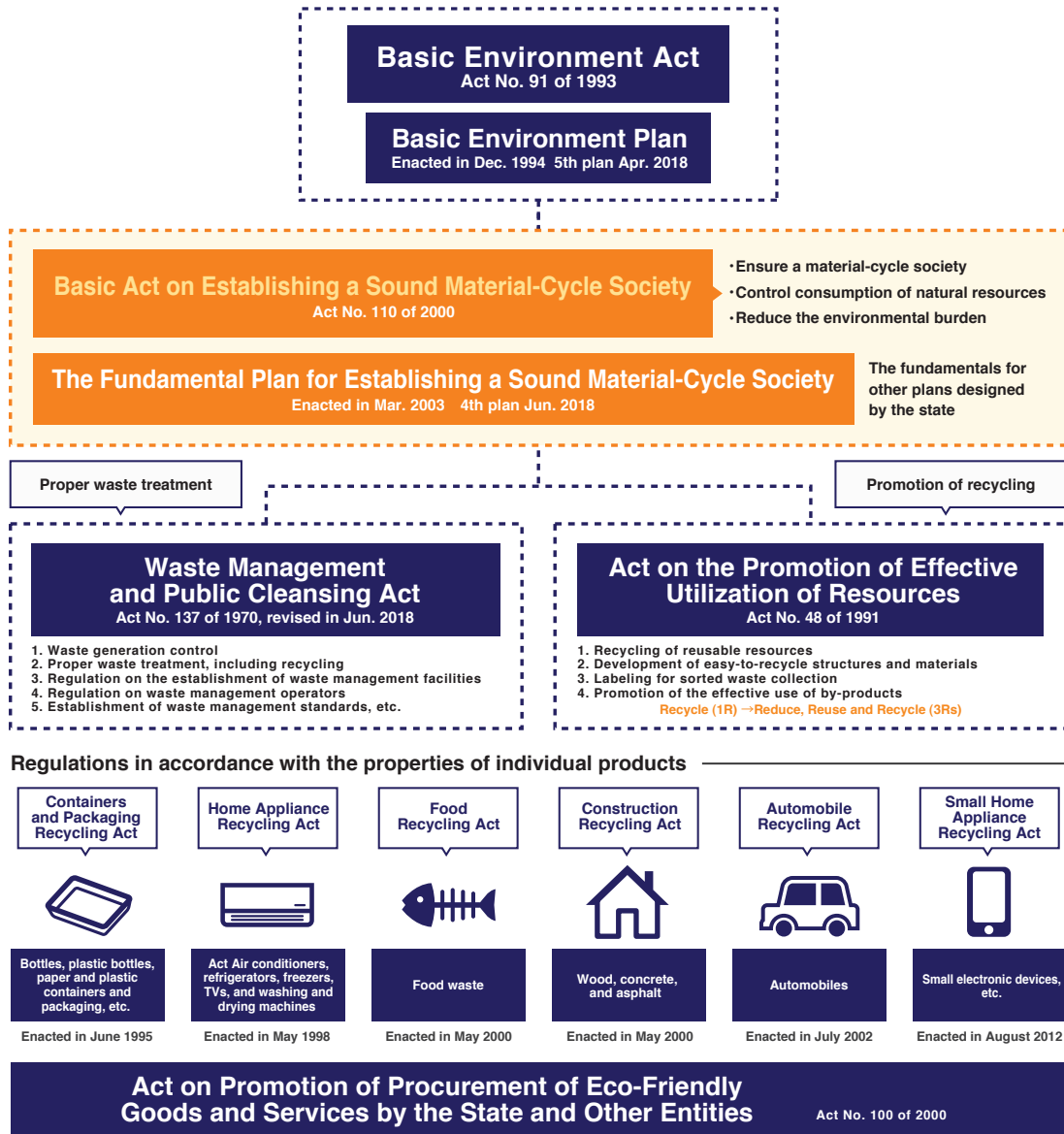


Re-style campaign

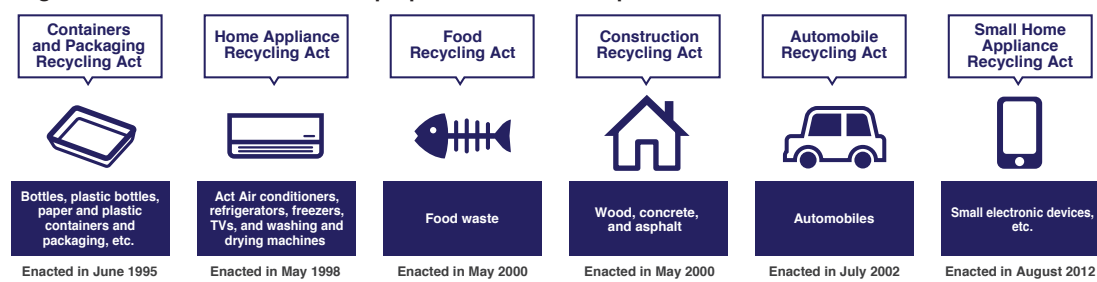


Planned measures

- Promotion of efficient waste collection and expanded use of advanced sorting technology
- Raise awareness and encourage the young generation to act through a "Re-Style" campaign linked to pop culture



Regulations in accordance with the properties of individual products

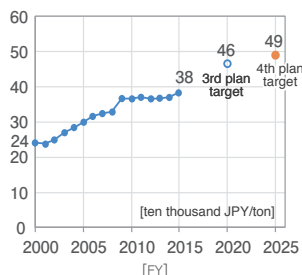


Act on Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (Act No. 100 of 2000)

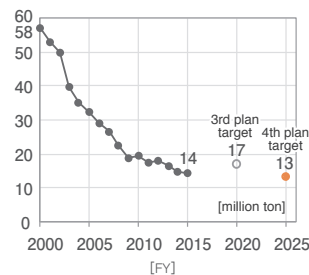
Achievements

Resource productivity up 58% and final disposal amount down 74% due to the 3Rs(reduce, reuse and recycle) during the FY2000-2015 period

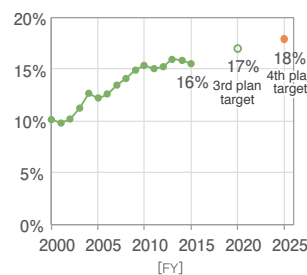
Resource productivity has increased, while the final disposal amount is on a downward trend, with industrial waste showing a significant drop. This change owes to the decrease in the input of natural resources in Japan, due primarily to a decrease in large-scale public works and changes in the industrial structure, as well as an increase in the amount of cyclical use thanks to the recycling acts.



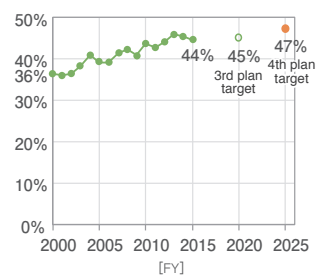
Resource productivity



Final disposal amount



Cyclical use rate (resource base)



Cyclical use rate (waste base)



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