

# Environment

The Ricoh Group considers it essential to simultaneously protect the environment while generating profits. We accordingly practice environmental management, through which we strive to reduce our eco-footprint and improve the Earth's regenerative capabilities groupwide. We seek to materialize social sustainability by tackling material issues of helping to achieve a zero-carbon society and a circular economy. We have set environmental goals for 2030 and 2050. We have also formulated ESG targets linked to material issues, and are deploying measures to reach them under mid-term management strategies.

Refer to our website: **1 Environment** **2 Materiality**  
**Ricoh Group Environmental Declaration**  
 We proactively reduce our environmental impact and strive to improve the Earth's self-recovery capabilities to achieve a zero-carbon society and a circular economy through business.

**Fiscal 2022 initiatives and results**

- Steadily reduced Scope 1, 2, and 3 GHG emissions from base year in line with zero-carbon roadmap in drive to reach 2030 environmental goals
- Stepped up renewable energy deployment quality and quantities by setting targets for employing additional renewable energy and concluding Ricoh Group's first domestic virtual power purchase agreement
- Calculated GHG emissions intensity of recycled plastics in-house and registered in domestic GHG emissions intensity database, and reflected in Scope 3 calculations
- Domestically launched MFPs with 50% recycled plastic content

## Achieving a zero-carbon society

We aim to virtually eliminate GHG emissions across our value chain by 2050. By 2030, we seek to cut Scope 1 and 2 GHG emissions by 63% from fiscal 2015 levels. These ambitious goals satisfy the criteria of Science Based Targets<sup>1</sup>, a global initiative for limiting the rise in global temperature to 1.5°C above pre-industrial levels. We also look to lower Scope 3

supply chain GHG emissions by 40% by 2030 from fiscal 2015 levels and obtain 50% of our electricity from renewable sources (additional renewable energy accounting for at least 35%).

We now also aim to benefit society with 1.4 million metric tons in avoided GHG emissions by 2025 from providing digital services to customers.

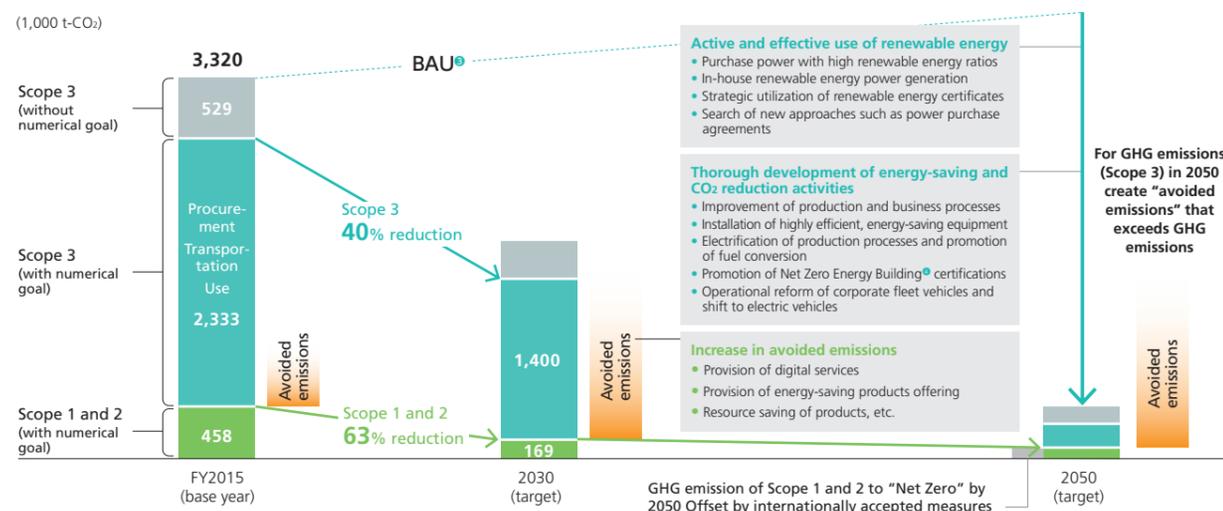
## Ricoh Group environmental goals (zero carbon)

### Goals for 2030

- GHG Scope 1 and 2: 63% reduction<sup>1</sup> vs. fiscal 2015
- GHG Scope 3: 40% reduction<sup>2</sup> vs. fiscal 2015 (procurement, use, and logistics categories)
- Switch 50% of electricity used in business operations to renewable energy (additional renewable energy accounting for at least 35%)

### Goals for 2050

- Achieve zero GHG emissions across entire value chain
- Switch 100% of electricity used in business operations to renewable energy



**INFO**

- Science Based Targets initiative (SBTi)**  
This global initiative certifies that companies' GHG reduction goals are in keeping with scientific evidence
- GHG Scope 1, 2 and 3**  
GHG Scope 1: All direct GHG emissions from Ricoh Group factories, offices, vehicles, etc.  
GHG Scope 2: Indirect GHG emissions from the consumption of electricity and heat purchased by Ricoh Group  
GHG Scope 3: Emissions in the supply chain of business activities (excluding GHG Scope 1 and 2)
- BAU**  
Business As Usual, representing emissions levels in the absence of additional initiatives

## Zero-carbon endeavors and achievements in fiscal 2022

We formulated a GHG reduction roadmap through 2030, and are extensively conserving energy and tapping renewables to help restrict the global temperature rise to 1.5°C. In fiscal 2019, we adopted 100% renewable electricity to manufacture A3 MFPs worldwide. In fiscal 2021, we deployed power purchase agreements at four sites in Japan and abroad to secure additional renewables. In fiscal 2022, we signed our first domestic virtual power purchase agreement<sup>4</sup>. We are devoting considerable attention to reducing GHG emissions in our supply chain. We are doing that by making products smaller and lighter, reducing, reusing, and recycling, and designing products for long-term use. Other efforts include launching products with exceptional energy-saving performances, and overhauling logistics. As a result of our efforts, our combined direct (Scope 1) and indirect (Scope 2) GHG emissions totaled 249,400 metric tons in fiscal 2022; this was 5.0% lower than a year earlier and 45.5% down from the fiscal 2015 base year. Renewables represented



30.2% of our electricity usage in the period under review, up 4.9 percentage points from the previous term. GHG emissions from the supply chain, encompassing procurement, transportation, and use category (Scope 3), were 1,600,000 metric tons in fiscal 2022, down 31.4% from fiscal 2015.

We aim to use environmental value from a virtual power purchase agreement to switch to renewable electricity at the Ricoh Technology Center

## Life cycle assessment (LCA) initiatives

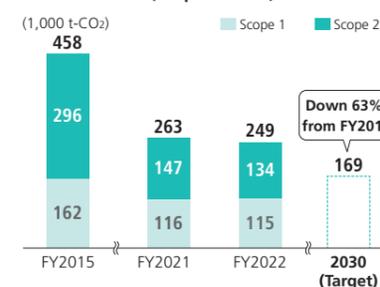
We initiated LCAs in the 1990s, primarily for our imaging products. We have presented qualitative information about our products since the EcoLeaf environmental label launch in 2002 in conformity with the Type III environmental declarations of ISO 14025. We disclose carbon footprint information for key imaging products in line with EcoLeaf calculation and disclosure standards. We use the LCA methodology to annually calculate avoided emissions for our environmental impact reductions for society from providing products and digital services. For example, Ricoh's digital printing presses offer lower environmental impacts on society overall than conventional counterparts by reducing inventories and power consumption while eliminating the need for printing plates in catering to growing demand for high-mix, low-volume print runs. Our total avoided emissions in fiscal 2022 were 1,045,000 metric tons. We launched the LCA Usage Working Group in fiscal 2021 to strengthen assessment initiatives. We appointed key persons in each business unit to drive internal LCA progress. In fiscal 2022, we set up a domestic GHG emissions intensity database for the intensities that the working group's members compiled for recycled plastics to help lower emissions. We plan to continue using LCAs to lower Scope 3 emissions and expand avoided emissions.

Avoided emission contributions	FY2020	FY2021	FY2022
Provision of energy-saving products	244	197	226
Provision of digital services	124	762	752
Resource saving of products	64	74	67
<b>Total</b>	<b>432</b>	<b>1,033</b>	<b>1,045</b>

(1,000 t-CO<sub>2</sub>)

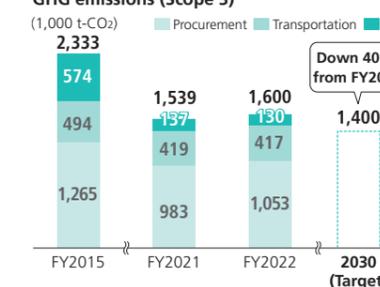
## Fiscal 2022 results

### GHG emissions (Scope 1 and 2)



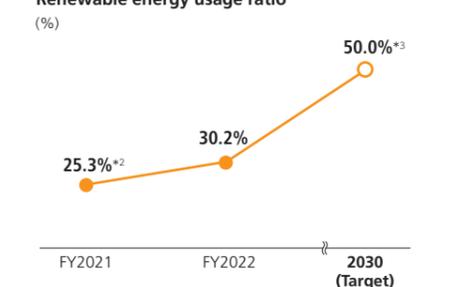
Note: Updated figures for fiscal 2015, fiscal 2021, and for 2030 reflect impacts of acquisitions and revisions of some regional data

### GHG emissions (Scope 3)\*1



\*1 Procurement, transportation, and use category  
 Note: Updated figures for fiscal 2015, 2021, and 2030 reflect impacts of acquisitions and revised emissions intensities

### Renewable energy usage ratio

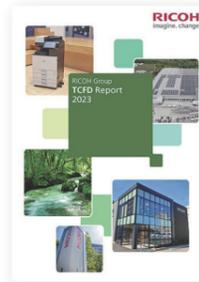


\*2 Updated figures for fiscal 2021 reflect impacts of acquisitions and revisions of some regional data  
 \*3 Additional renewable energy accounting for at least 35%

## Information disclosure based on TCFD framework<sup>1</sup>

Climate change is one of Ricoh's critical management issues. The ESG Committee discusses and clarifies climate change risks and opportunities with management and drives zero-carbon initiatives. We particularly endeavor to lower risks from increasingly severe natural disasters by formulating risk management and business continuity plans and implementing them as swiftly as possible. As an environmental management pioneer, we have focused providing products and solutions that help customers achieve zero carbon while creating new businesses.

We have published the Ricoh Group TCFD Report since fiscal 2021. It presents our stance on climate change risks and opportunities based on scenario analyses, specific plans and achievements in line with our roadmap for achieving zero carbon, and case studies.



Refer to our website:  
[1 Ricoh Group TCFD Report](#)

### Climate change risks

Climate change impact on Ricoh Group		Impact	Urgency
Transition risks	<b>Transition risk 1 (2°C/1.5°C scenario*1)</b> Carbon taxes and emissions trading systems applying to suppliers	<ul style="list-style-type: none"> <li>Carbon pricing (carbon tax and emissions trading) applying to all suppliers, increasing procurement costs as raw materials prices are passed on</li> <li>Minimal impact of carbon pricing (carbon tax and emissions trading) on Ricoh Group (systematic GHG reductions under SBT 1.5°C target)</li> </ul>	¥1 billion or less Within 5 years
	<b>Transition risk 2 (2°C/1.5°C scenario)</b> Rapidly changing consumer and investor behavior in drive toward zero-carbon society	<ul style="list-style-type: none"> <li>Incurring additional costs to accelerate such measures as to invest in energy-saving and renewable energy facilities and switch to renewables to achieve 1.5°C target and goals of RE100 global renewable energy initiative ahead of schedule</li> </ul>	¥1 billion or less Within 5 years
Physical risks	<b>Physical risk 1 (4°C scenario*2)</b> Rapid increases in natural disasters	<ul style="list-style-type: none"> <li>More extreme weather events from climate change causing more wind and flood damage than expected at Ricoh plants and supplier sites, disrupting supply chain to halt production and increase sales opportunity losses</li> </ul>	Up to ¥20 billion Within 5 years
	<b>Physical risk 2 (4°C scenario)</b> Regional infectious disease epidemics	<ul style="list-style-type: none"> <li>Parts supply disruptions hampering production plans</li> <li>Lower plant operating rates causing inventory shortages</li> <li>Impeded face-to-face sales eroding sales opportunities</li> </ul>	Up to ¥20 billion Within 10 years
	<b>Physical risk 3 (4°C scenario)</b> Declining forest resources	<ul style="list-style-type: none"> <li>Global warming increasing wildfires, pest infestations, and other forest damage, further destabilizing paper pulp supplies and increasing paper costs</li> </ul>	¥1 billion or less Within 10 years

\*1 2°C/1.5°C scenario: Global average temperature increasing less than 2°C by 2100

\*2 4°C scenario: Global average temperature increasing 4°C by 2100

### Opportunities associated with climate change

Contribution areas	Fiscal 2022 results overview	Financial impacts
Mitigation contributions	Energy-saving products and services helping to mitigate climate change	<b>Approx. ¥1,165 billion</b>
	<ul style="list-style-type: none"> <li>Sales of environmental label-certified products helping to reach zero carbon</li> <li>Sales from negotiations in which ESG responsiveness was key</li> <li>Sales from products and parts remanufacturing</li> <li>Sales from businesses saving and creating energy</li> <li>Contributions from new businesses, including sales of eco-friendly linerless labels</li> </ul>	Approx. ¥1,060 billion Approx. ¥40 billion Approx. ¥30 billion Approx. ¥30 billion Approx. ¥5 billion
Adaptation contributions	Developing products and services that avoid or mitigate climate change effects	<b>Approx. ¥130 billion</b>
	<ul style="list-style-type: none"> <li>Sales of solutions for new workstyles (Scrum package solutions and assets*1 and Leading Change at Work*2)</li> <li>Contributions from new businesses, including sales of energy-harvesting*3 products</li> </ul>	Approx. ¥130 billion

\*1 Scrum assets: Small and medium-sized enterprise issue solutions model sold in Japan

\*2 Leading Change at Work: Solutions package sold in Europe

\*3 Energy Harvesting: Generating electricity from surrounding light, heat, and vibrations

## Realizing a circular economy

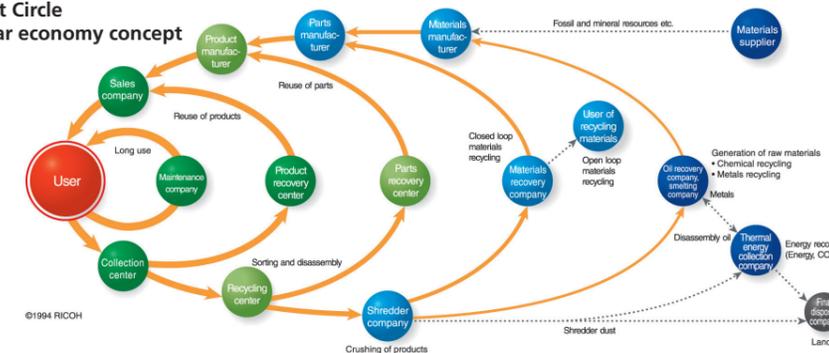
Interest in a circular economy has surged in recent years. In 1994, the Ricoh Group created the Comet Circle concept for materializing such an economy. We have drawn on its principles to foster effective resources usage across product life cycles.

We established goals for 2030 and 2050, and are stepping up efforts to use fewer new resources and recycle them and reduce or replace plastics from fossil resources. In fiscal 2021, we debuted the Ricoh Group Circular Economy Report<sup>2</sup>. We were the first Japanese company to publish such a document. We presented activities in line with the Disclosure and Engagement Guidance to Accelerate Sustainable Finance for a Circular Economy, which Japan's Ministry of Economy, Trade and Industry and Ministry of the Environment published in January 2021.

Refer to our website:  
[2 Ricoh Group Circular Economy Report](#)



### Comet Circle circular economy concept



### Comet Circle

#### Four Action Guidelines

- Identify and reduce environmental impacts from lifecycle perspectives
- Deploy reuse and recycle practices with lower environmental impacts
- Establish circular business model
- Partner with stakeholders

### Ricoh Group environmental goals (resource conservation)

#### Resource conservation policy

- Contribute to realizing a circular economy by promoting the efficient use of natural resources.
- Offer recycled products and promote further use of and conversion to sustainable resources with low environmental impact

**2030 goal** • Virgin material usage ratio in products: **60% or less**

**2050 goal** • Virgin material usage ratio in products: **12% or less**

#### Ricoh Group Plastic Policy for Products

Ricoh Group has set targets and goals for plastic usage of its products and packaging under consideration of social issues such as "Shifting to a circular economy," and "Tackling ocean micro-plastic pollution"

- Breakaway from dependence on virgin plastic derived from fossil resources
- Material recyclable design

#### Plastics goals

- Use of post-consumer recycled plastics for imaging products Goals for 2030: Post-consumer recycled plastic content rate of 50% or more
- Reduction in packaging materials for virgin plastic derived from fossil resources Goals for 2030: 50% or more reduction compared to 2020 level
- Display resin identification code and single material use Goals for 2025: Clearly indicated on all parts and all packaging materials

#### End-of-life product disposal targets

- Reuse and recycling rates: More than 87.5% by 2030 and more than 93.5% by 2050
- Incineration and landfill rates: Less than 0.5% by 2030 and zero by 2050

#### Waste reduction target

Reduce waste to below previous year's level (Data collection scope is Ricoh production and non-production sites and production subsidiaries)

#### Water Policy

- We base our actions on the recognition that all people have the right to use safe and secure water resources.
- We understand our business impact on water resources, factoring in regional characteristics and setting activity targets.
- We manage water resources in compliance with laws and regulations, international standards and initiatives, and public policies.
- We innovate technologies to help resolve internal and external water resource issues.
- We endeavor to raise awareness among all employees, with each of them engaging with stakeholders to help resolve community water resource issues.
- We consider resource conservation, climate change, and pollution prevention when procuring raw materials, products and services, and equipment.

#### Targets for water consumption from business activities

Reduce water to below previous year's level (Data collection scope is Ricoh production and non-production sites and production subsidiaries)

#### INFO

**1 Product virgin material content** Ratio of virgin materials usage to total resources inputs

### Resource conservation initiatives and fiscal 2022 results

In product initiatives, cross-organizational working groups are driving efforts to reach resources conservation targets for 2030 and 2050.

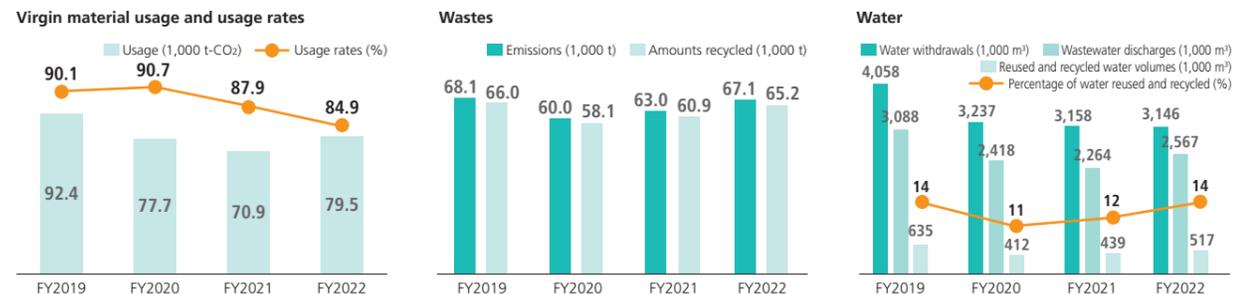
In fiscal 2022, reuse amounts increased worldwide from a year earlier. The weight of reused materials rose 29% on expanded sales of recycled machines and efforts to step up toner bottle recycling. We will expand business continuity plan and other initiatives to offset difficulties in procuring new parts by reusing them. During the term, recycled materials content in mainstay full-color A3 MFP machines Ricoh IM C6010, C5510, C4510, C3510, C3010, C2510, and C2010 exceeded 50% of total plastics content. This was an industry first for A3 models. Recycled materials content from the expanded use of such materials thus rose 61% from a year earlier. The new resource usage ratio for fiscal 2022 was thus 84.9%, while the new resource usage volume was 79,500 metric tons.

We collect used products for reuse and recycling in line with our Comet Circle concept. We have kept our incineration and

landfill rates at 4% or below worldwide since early this century.

We are working on production processes and setups that minimize resource losses and thereby streamline manufacturing while lowering emissions. In fiscal 2022, our emissions rose 6.7% from a year earlier as the impact of the COVID-19 pandemic abated. The waste recycling rate from our sites remained high, however, at around 97%, reflecting efforts to reuse waste as resources. It is also worth noting that we minimize contamination risks by visiting waste contractors to confirm proper waste disposal. We regularly audit waste storage at our own sites. Everyone has a right to safe and accessible water. We thus monitor water consumption at all of our global production sites. Our risk assessments refer to the Aqueduct Water Risk Atlas of the World Resources Institute, an international environmental nongovernment organization. We factor in regional characteristics and public policies in striving to use water resources appropriately.

### Fiscal 2022 results



Refer to our website: [ESG Data Book](#)

### Pollution prevention initiatives<sup>1</sup>

We formulated Basic Policy on Chemical Substances Management to help safeguard human health and the environment. We aim to reduce management risks through controlling such chemicals by using them properly in our operations and products.

#### Basic Policy on Chemical Substances Management

- (1) Comply with laws and regulations
- (2) Manage substances across entire lifecycles
- (3) Minimize risks through preventive measures
- (4) Develop and deploy technologies
- (5) Consider and address risk tradeoffs
- (6) Engage with communities
- (7) Constantly enhance employee skills

### Reducing business growth risks

When obtaining land or buildings through business acquisitions, we conduct environmental due diligence in line with internal rules to assess risks. These risks include soil and groundwater contamination, polychlorinated biphenyl, and

asbestos. We assess potential impacts on our business growth and act accordingly. We recognize and address the impacts of changes associated with becoming a digital services company.

Refer to our website: [Prevention of Pollution](#)

### Conserving biodiversity<sup>2</sup>

We established the Ricoh Group Biodiversity Policy in fiscal 2009 to help create a prosperous and sustainable economy. We formulated the Regulation of Ricoh Group Products Made of Wood\* in fiscal 2010 to prevent deforestation and procure raw materials. We also consider labor and other social aspects in this process.

In 2023, we formulated the Paper Procurement Policy to consider the environment, human rights, and local operations in using this vital resource. We undertake initiatives based on our policies and rules to lower the environmental impacts of our operations while maintaining and enhancing the Earth's regenerative capacity.

\* These regulations were based on our 2003 Environmental Standards for Paper Product Procurement

#### Biodiversity Policy

Society has developed owing to the Earth's abundant natural resources. However, we recognize that the very diversity of life that has supported our environment is in decline. We responded by formulating this biodiversity policy.

#### Basic Policy

Given that we benefit greatly from living things and pursue business activities that have an impact on biodiversity, we will reduce the impacts of our activities on biodiversity and engage in its protection.

#### Regulation of Ricoh Group Products Made of Wood

From the viewpoint of global environmental conservation and biodiversity protection, this provision shall be established to confirm that the wooden raw materials used in Ricoh brand products and their accessories are legally obtained with consideration for the sustainability of the place of origin in environmental and social aspects prior to the decision of procurement.

#### [Scope]

It shall apply to paper products marketed under the Ricoh Group brand (PPC paper, thermal paper, etc.) as well as materials made of wood, which accompany with Ricoh Group brand products (seals, manuals, packaging material, cushion material, etc.).

#### [Requirements for raw materials]

1. Confirmation of legality of lumber in the country of origin at the time of production.
2. Wood produced from a forest where sustainable forest management is practiced without adverse environmental or social impact at the time of production.
3. The products delivered to the Ricoh Group do not use wood procured by a "Supplier with Problems."

#### Paper Procurement Policy

Ricoh Group established "paper\* standards" and "supplier standards" and has adopted these two standards in its Paper Procurement Policy.

#### [Paper standards (Requirements for procured paper)]

- The paper must be produced from forests that are sustainably managed and have been verified as legally compliant.
- The paper must not be made from wood sourced from High Conservation Value (HCV) forests.
- The traceability of virgin paper/recycled paper must be confirmed.
- The safety of chemical substances used in the paper manufacturing process must be confirmed.
- Environmental and safety controls must be in place in the paper manufacturing process (including wastewater disposal and other water management).
- The paper must be chlorine-free bleached paper (ECF).

#### [Suppliers standards (Requirements for procurement transactions)]

- Suppliers must comply with the laws and regulations of the region and country in which they operate, and they must conduct their operations and supply products with consideration for the environment, including climate change prevention, appropriate use of resources, and biodiversity conservation.
- Suppliers must protect the human rights of residents and indigenous people in the producing areas and maintain good relationships with them.
- Suppliers must protect the human rights of workers and employees, and they must have no relationship with antisocial forces or organizations.

\* Scope: PPC paper and paper rolls

### Protecting tomorrow through the One Million Trees Project

Conserving forests is essential to protect biodiversity, prevent global warming, and ensure sustainable community development. We strive to conserve forests and increase tree numbers. We collaborate with diverse stakeholders. These include environmental nongovernment organizations, local governments, community residents, and other experts. To further accelerate these efforts, we joined the 30by30 Alliance for Biodiversity in April 2022. Its founders were 17

organizations from industry, the private sector, and such Japanese government bodies as the Ministry of the Environment.

Goal	Progress
<b>Plant one million trees</b> from fiscal 2020 through 2030	<b>338,000 trees planted thus far</b>
	92,000 in fiscal 2020
	149,000 in fiscal 2021
	97,000 in fiscal 2022



Ricoh Japan helps safeguard ecosystems by planting mangroves in Indonesia and the Philippines in proportion to unit sales of energy-efficient MFPs.

Actual number of trees planted in fiscal 2022 is 97,000.



We own Ena Forest in Gifu Prefecture, Japan, which the Ministry of the Environment has certified for participating in its Nature Symbiosis Sites trial.

Ricoh Group undertook 11 conservation projects in fiscal 2022.

Refer to our website: [Conservation of Biodiversity](#)