

Forest Management and Raw Material Procurement Responsibility



BTP (Australia) afforested area

The Nippon Paper Group, as a comprehensive biomass company pursuing business endeavors that are founded on sustainable forest management and promoting sustainable growth by using, and later recycling, every bit of the renewable wood resources it harvests, contributes to better living and cultural progress.

In addition, we preserve biodiversity through sustainable forest management. Because forests act to sequester CO₂, our use of wood resources actually contributes to the fight against global warming.

Indicators	Key Objectives	Performance (fiscal 2017)
Materiality Sustainable Procurement of Raw Materials		
Maintenance of forest certifications for all company-owned forests inside and outside Japan	100% of company-owned forests	100%
Ensure that all wood materials for pulp and paper are endorsed under forest certification systems	100% of wood used as raw material for paper	100%
Conduct survey-based audits of overseas chip and pulp suppliers	100% of chip and pulp suppliers	100% (Overseas chip suppliers: 21; domestic and overseas pulp suppliers: 19)
Promote use of domestic timber	Maintain a domestic timber utilization rate that exceeds the wood self-sufficiency rate	Achieved a domestic timber utilization rate that exceeds the wood self-sufficiency rate

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Policy and Management

Practicing sustainable procurement of raw materials in ways that consider environmental and social concerns in line with our philosophy and basic policy

Basic Stance

Pursuing sustainable and stable wood resources procurement

Woodchips and wastepaper, as recycled material, are the main raw materials for pulp and paper. Procurement of these materials entails the support not only of suppliers in and outside of Japan, but also the communities and government authorities of local production areas. Taking into consideration relationships with the environment and society, the Nippon Paper Group recognizes the importance of working closely with suppliers to establish a sustainable supply chain that incorporates production area forest ecosystem, local community, occupational safety and health as well as other concerns.

Accordingly, we have built and implemented a structure and framework that will allow us to sustainably procure renewable wood resources.

Philosophy and Basic Policy

Focusing on Supply Chain Management in Procuring Raw Materials

The Nippon Paper Group established its Philosophy and Basic Policy Concerning Raw Materials Procurement in 2005. Based on this philosophy and basic policy, we use supply-chain management to practice sustainable raw material procurement that is both environmentally and socially conscious. Moreover, we promote dialogue with stakeholders as we strive to take our environmentally and socially conscious raw material procurement to greater levels of achievement.

Sustainable Forest Management

Practicing proper planning and management

Forestry management considers not only economic, but also environmental and social sustainability. The Nippon Paper Group defines sustainable forest management as:

- 1) Biodiversity is preserved.
- 2) The productivity and soundness of the forest ecosystem is maintained.
- 3) Soil and water resources are conserved.
- 4) Diverse social needs are satisfied.

Proper planning and management are important factors in the sustainable management of forests. A considerable amount of time is required to cultivate trees to their maturity. In putting together a viable sustainable forest management plan, it is important to consider factors including the areas allocated to afforestation and harvesting, the rate of growth, the surrounding environment and the impact on society.

Landscape concerns related to efforts to protect waterside forests and address other such needs must also be examined. Taking full advantage of its expertise in forest management, the Group is promoting proper planning and management.

Framework for Promoting Raw Materials Procurement Management

Overseeing raw material procurement for the entire Group

The Nippon Paper Group established the Raw Materials Committee, chaired by the general manager of the Raw Materials and Purchasing Division at Nippon Paper Industries. This subcommittee deliberates on a wide variety of important issues concerning raw material procurement, including the Group's overarching procurement policy.

Philosophy and Basic Policy Concerning Raw Materials Procurement

(formulated on October 5, 2005)

Philosophy

We are committed to establishing a reliable raw materials procurement system through global supply chain management in consideration of the environment and society.

Basic Policy

1. Environmentally friendly raw materials procurement

- (1) We procure woodchips, lumber and pulp from forests under sustainable forest management.
- (2) We use and deal in no illegally logged lumber and we support the eradication of illegal logging.
- (3) We make active use of recycled materials to help build a recycling-oriented society.
- (4) We make appropriate procurement of chemical substances in compliance with relevant laws and regulations.
- (5) We build traceability systems to ensure the above policies are practiced throughout the supply chain.

2. Socially aware raw materials procurement

- (1) We pursue fair deals with suppliers on equal terms.
- (2) We ensure that the entire supply chain has appropriate human rights and labor practices.

3. Promotion of dialogues with stakeholders

- (1) We engage in dialogues with stakeholders to improve the quality of our raw materials procurement in constant consideration of the environment and society.
- (2) We proactively disclose information so that our initiatives are better known.

Current Status of Raw Materials Procurement

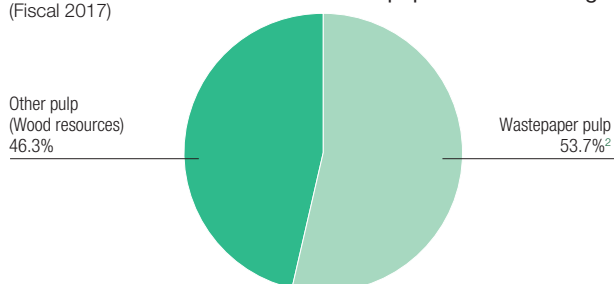
In addition to actively promoting the use of recycled paper, we procure wood resources from sustainably managed forests.

Current Status of Paper Raw Materials Procurement

Using wastepaper and wood resources as raw materials

The Nippon Paper Group is engaged primarily in the manufacture of paper products. 53.7 percent of the raw materials are composed of recycled paper and the remaining 46.3% consists of such wood resources as woodchips.

Breakdown of main raw materials for paper manufacturing¹
(Fiscal 2017)



1 Consolidated Group companies in Japan
2 Includes purchased wastepaper pulp

Initiatives aimed at stable wastepaper procurement

With each passing year, the collection of wastepaper has taken on greater importance for reducing waste volumes and reusing materials. For Japan's paper industry, wastepaper is an essential resource accounting for more than half of the raw materials it uses.

Against this backdrop, the Nippon Paper Group has maintained a stable system for procuring wastepaper. This system, the product of many years of collaboration with the wastepaper industry, promotes the recycling of wastepaper.

Initiatives aimed at stable wood resource procurement

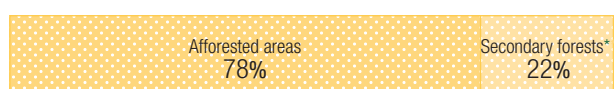
Most of the wood raw materials Nippon Paper Industries Co., Ltd. procures consist of woodchips, with pulp making up the rest. Over 60% of the woodchips we use come from overseas sources and less than 40% from domestic. To ensure stable overseas procurement, sources of woodchip imports are diversified among Australia, South America, and other parts of the world.

Geographic breakdown of wood raw materials (chips) procured by Nippon Paper Industries Co., Ltd. (FY2017)

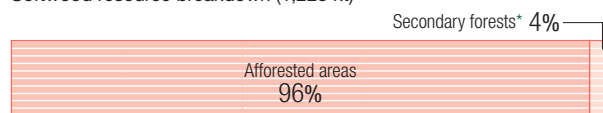
(Bone dry units, kt = kilotonnes)



Hardwood resource breakdown (3,142 kt)



Softwood resource breakdown (1,223 kt)



* Forests that have recovered naturally or that have been artificially replanted after an event such as timber harvesting or fire.

Tree species and countries of origin for overseas woodchips procured by Nippon Paper Industries Co., Ltd. (Fiscal 2017)

Hardwood

Country	Percentage	Species
Australia	29%	Eucalyptus
South Africa	23%	Acacia
Brazil	18%	Eucalyptus, Acacia
Vietnam	16%	Acacia
Chile	14%	Eucalyptus
Total	100%	

Softwood

Country	Percentage	Species
Australia	79%	Radiata pine
U.S.A.	13%	Douglas fir
Russia	8%	Yezo spruce
Total	100%	

Sustainable Procurement of Raw Materials

Practicing sustainable forest management and resource procurement using certifications as benchmarks

Basic Stance

Focusing on legal compliance and transparency in the procurement of raw materials

The Nippon Paper Group is a strong advocate of sustainable raw materials procurement that takes into consideration environmental and social concerns. Our procurement of wood raw materials rests on the principles of legality and emphasizes sustainability, clear identification of the origin of wood resources, and full accountability.

When purchasing from external suppliers, we make every effort to enhance our supply chain management capabilities, taking into consideration environmental and social needs. At the same time, we use a system that employs third-party forest certification programs to confirm the propriety of raw materials procurement.

In the context of procurement from company-owned forests, we pursue overseas afforestation projects to increase our plantation timber procurement. Moreover, we practice sustainable forest management by maintaining forest certifications acquired for company-owned forests both in Japan and overseas.

Key points of sustainable wood resources procurement

- Sourcing from sustainable forests (sustainability)
- Clearly identifying the origin of timber (traceability)
- Maintaining full accountability (accountability)

About the Clean Wood Act

In March 2018, Nippon Paper Industries Co., Ltd. completed its registrations as both a Type 1 and Type 2 Wood-related Business under the Act on Promotion of the

Distribution and Use of Legally Harvested Wood (the Clean Wood Act), which took effect in May 2017. In compliance with this law, the company confirms the legality of the covered items it handles.

Action Plan for Wood-Based Raw Material Procurement

Eradicating illegal logging while promoting environmentally and socially aware procurement

The Nippon Paper Group has put in place its Action Plan for Wood-based Raw Material Procurement, in keeping with the Group's Philosophy and Basic Policy Concerning Raw Materials Procurement. This action plan provides a roadmap that incorporates checks on the legality of woodchips, and consideration for human rights, labor, local communities, and the preservation of biodiversity, allowing the Group to practice CSR procurement. This action plan also helps enhance traceability and the use of forest certifications with respect to woodchips procured from overseas while placing considerable emphasis on trade association certification of the legality of woodchips produced in Japan.

Nippon Paper Industries, in connection with annual forest certification audits and audits performed by the Japan Paper Association's illegal logging monitoring project, has third parties perform objective assessments to determine whether it is conducting wood resource procurement in accordance with its basic policies. Suggestions from these assessments are then used to make improvements.



➡ Action Plan for Wood-Based Raw Material Procurement
<http://www.nipponpapergroup.com/csr/forest/procurement/actionplan/index.html> (Japanese only)

Overview of major forest certification programs

Certification program name	Details and features
PEFC —Programme for the Endorsement of Forest Certification A program that promotes mutual recognition of the forest certification programs of individual countries	PEFC bases its sustainability benchmark on a broad consensus expressed in intergovernmental processes and guidelines. It provides a mutual recognition system that endorses compatibility and comparability of the responsible forest management systems of individual countries. Launched across countries in Europe, the program encompasses the forest certification programs of 49 countries around the world. PEFC has adopted the FM and CoC certification systems*. Examples of certifications mutually approved by PEFC (for forests owned by Nippon Paper Industries Co., Ltd.) Australian Forestry Standard (AFS): Australia / CERTFORCHILE: Chile / CERFLOR: Brazil
SGEC —Sustainable Green Ecosystem Council A forest certification program established in Japan	SGEC engages in an evaluation based on seven criteria while taking into consideration Japan's natural environment as well as its social customs and culture. Mutual certification with PEFC was approved in June 2016.
FSC® —Forest Stewardship Council® A forest certification program based on unified global standards (License No. FSC® C001751)	FSC® is a non-profit international member-based organization that certifies that forests are being managed in compliance with its 10 principles and 70 standards. FSC® has adopted the FM and CoC certification systems*.

* FM and CoC Certification

The forest certification system is composed of two components—the Forest Management (FM) component, which certifies that forests are responsibly managed, and the Chain-of-Custody (CoC) component, which certifies that products from certified forests have been properly processed and distributed.

Under the FM certification system, a third party certifies that the management of forests is being undertaken in a sustainable manner based on various objective benchmarks including (1) compliance with regulatory requirements and system frameworks, (2) maintenance and preservation of forest ecosystems and

biodiversity, (3) respect for native and local resident rights, and (4) maintenance and improvement of forest productivity.

CoC certification is a system covering all operators engaged in the processing and distribution of timber materials. In addition to tracking products (certified woodchips) from certified forests in each process including processing and distribution, CoC certification confirms that a risk assessment of all non-certified woodchips has been undertaken. Products display a certification mark in the event that all operators have acquired CoC certification across all processes.

Sustainable wood resource procurement scheme

Philosophy and Basic Policy Concerning Raw Materials Procurement (see page 24)

Action Plan for Wood-based Raw Material Procurement

	Japanese Resources	Overseas Resources
Basic Policy and Scheme	<ul style="list-style-type: none"> Based on verifications by organizations approved by forest, timber or lumber industry organizations specified in the Guideline for Verification of Legality and Sustainability of Wood and Wood Products established by Japan's Forest Agency in connection with government procurement initiatives to fight illegal logging in accordance with the Law on Promoting Green Purchasing. 	<ul style="list-style-type: none"> Verifications by individual companies using their own approaches, as provided in the Guideline for Verification of Legality and Sustainability of Wood and Wood Products. Based on the Japan Paper Association's guideline for measures against illegal logging.
Confirmation of Legality and Traceability	<ul style="list-style-type: none"> Confirmation based on a due-diligence system (DDS) for verifying legality under the Clean Wood Act Traceability based on the Guideline for Verification of Legality and Sustainability of Wood and Wood Products established by Japan's Forest Agency Confirmation of basic information relating to forest operations. Information examples include compliance with laws and regulations, tree species, and whether forest certifications have been obtained. 	<ul style="list-style-type: none"> Document verifications are performed on a vessel-by-vessel basis to ensure that the area where the wood was harvested and the supplier of the wood are in compliance with relevant laws, and that no illegally harvested wood is included. On-site checks by employees assigned to local offices Questionnaires and local interviews (Every effort is made to enhance traceability by confirming compliance with statutory requirements regarding forest management, tree species, and the acquisition of forest certifications. <p>* In fiscal 2017, it was determined, based on questionnaire responses and shipping and other documents provided by each supplier, that no illegally harvested woodchips or pulp were procured from overseas suppliers.</p>
Confirmation of sustainability	<p>Based on information from sources such as results of supplier surveys and local interviews, the following has been confirmed.</p> <ul style="list-style-type: none"> Policies or systems have been established for addressing human rights and labor matters. Social contribution initiatives have been undertaken to improve relations with local communities. Biodiversity surveys have been conducted. Areas requiring special consideration to protect biodiversity have been identified and logging and forest management activities have been modified appropriately. 	
Independent Audits	<p>The following have been implemented for all procured wood resources.</p> <ul style="list-style-type: none"> Annual audits by the Japan Paper Association's illegal logging monitoring project. Annual risk assessments based on the due diligence system of the Programme for the Endorsement of Forest Certification (PEFC), a Forest certification organization. 	

Implementation Results for the Action Plan for Wood-based Raw Material Procurement (Fiscal 2017)

	Procurement in Japan	Procurement Overseas
Coverage and Results	<p>395 chip suppliers, 5 pulp suppliers (Implemented for all suppliers)</p> <p>Confirmation of conformance with the above action plan</p>	<p>21 chip suppliers, 14 pulp suppliers (Implemented for all suppliers)</p> <p>Confirmation of conformance with the above action plan</p>

 Third-Party Sustainable Forest Management Validations

Forest certification system: System for the certification by third-party organizations that forests are being sustainably managed

At Nippon Paper Industries Co., Ltd.,

- All company-owned forests in Japan and overseas have received forest certifications.
- All wood-based raw materials have been certified by the PEFC or FSC® (All procured chips have been produced with wood from forests with an FM certification or have undergone a risk assessment for the CoC certification.)

Protecting and Nurturing Japan's Wood Resources

Maintaining a focus on forest management that takes into consideration the characteristics of each region in an effort to promote sound growth

Sustainable Management of Company-Owned Forests in Japan

Practicing sustainable forest management at company-owned forests over an area extending to 90 thousand hectares

Nippon Paper Industries owns approximately 90 thousand hectares of forest in around 400 locations in Japan, the second largest private-sector holdings of forest in the country. SGEC Forest Certifications have been obtained for all of the forest. For the Nippon Paper Group, forests are not only an important business resource—as a corporate group shaping the future with trees, we recognize and work to manage the integrity of the multifaceted functions forests play within society.

● Maintaining company-owned forests in Japan

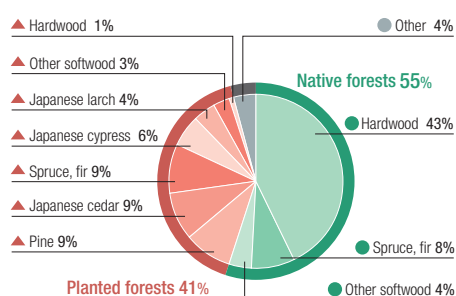
Nippon Paper Industries allocates approximately ¥0.7 billion each year to the maintenance and management of company-owned forests in Japan, which entails the clearing of undergrowth and thinning. As a company which has continued to benefit from and grow through forests and forest products, we are committed to balanced, sustainable forest management that allows forests to fulfill their multifaceted functions—including ones that benefit biodiversity preservation and watershed conservation—despite the fact that forests within Japan are not currently economically viable because of the stagnant price of domestic timber.



Sugenuma company-owned forest which includes an "environmental forest area" (Mt. Nikko-Shirane)

● Environmental forest designations, biodiversity-conscious forest management

Nippon Paper Industries Co., Ltd. designates its domestic company-owned forests as either "commercial forest areas" for the production of wood materials or "environmental forest areas," where wood-material production is not conducted and the ecological, water catchment, and other environmental functions of forests are protected. The company appropriately manages both forest types for their respective purposes. Environmental forest areas make up 18,000 hectares, or about 20%, of the company's domestic company-owned forests and are home to a wide variety of plant and animal species.



Invigorating Japan's Forest Industry

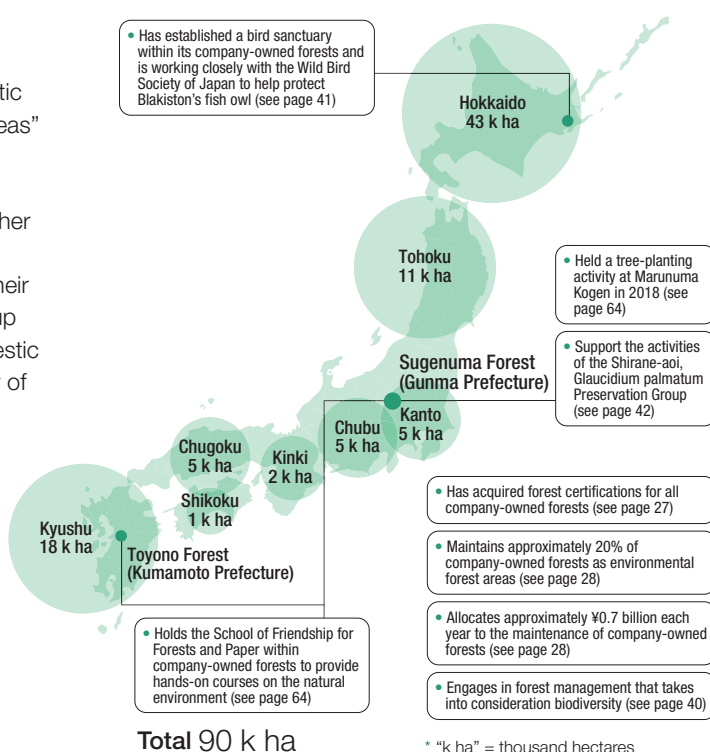
Actively utilizing domestically produced timber while contributing to the prevention of forest deterioration

In recent years, deterioration of artificially planted Japanese cypress and Japanese cedar forests throughout Japan has become a concern. The reason for this deterioration is low lumber prices that have squeezed forest industry profitability and made it impossible to perform thinning and other necessary maintenance. To invigorate the industry and prevent further forest deterioration, the Japanese government, under its Forest and Forestry Basic Plan, has committed itself to promoting the use of domestically produced wood, and lifting the nation's wood self-sufficiency rate to 50% by 2025.

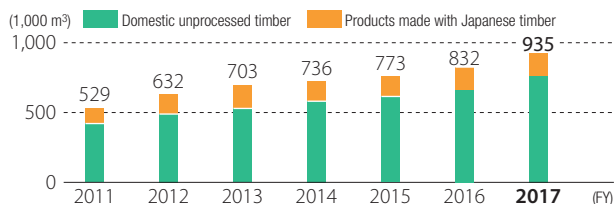
● Promoting the use of domestic timber

With its network for domestic timber collection in Japan, and its ability to handle a comprehensive lineup of products, Nippon Paper Lumber is actively developing its domestic timber business. In fiscal 2017, the company handled approximately 930 thousand m³ of domestically produced materials, and ranked second in its field in Japan. To achieve its objective of 1 million m³, the company is continuing to develop new applications while working to boost exports.

Distribution of company-owned forests in Japan and composition by tree species (Nippon Paper Industries Co., Ltd.) (As of March 31, 2018)



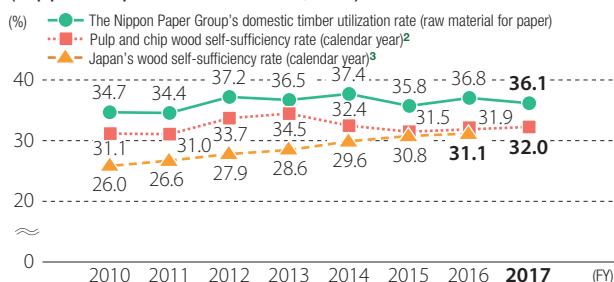
Domestic timber sales results by product type (Nippon Paper Lumber Co., Ltd.)



● Efforts to use more domestic wood as a raw material for paper

Nippon Paper Industries Co., Ltd. is working to increase the percentage of domestically produced wood it uses to make paper. Having reached 30% in fiscal 2008, this figure rose to 36.1% in fiscal 2017. We aim to carry on with our efforts to help invigorate Japan's forest industry by using Japanese timber whenever possible.

Domestic timber utilization rate¹ (Nippon Paper Industries Co., Ltd.)



1 The domestic (Japan) timber utilization rate includes sawmill residues.

2 Source: Yearbook of Paper and Pulp Statistics issued by the Ministry of Economy, Trade and Industry of Japan

3 Source: Supply and Demand of Lumber (Lumber material self-sufficiency rate) issued by the Forestry Agency of Japan

● Organizing private-sector forest owners in Kyushu

Increasing the competitiveness of Japan's forest industry requires that forest owners work not by themselves but together with owners of neighboring forests to undertake work such as road building and logging, and measures to protect against damage by wildlife.

In 2011, Nippon Paper Industries Co. Ltd. signed an agreement with the Kyushu Regional Forest Office; Oji Forest & Products Co., Ltd.; Sumitomo Forestry Co., Ltd.; and others to promote forest management in the Itsuki region of Kyushu. Since then it has entered into additional agreements, which together with the one mentioned above, cover four areas of Kyushu and provide for public-private cooperation in forest management. Moreover, in 2016, the company entered into an agreement to promote forest management in the Mt. Fuji Seiroku area, on the west side of Mt. Fuji, together with the Shizuoka District Forest Office, a part of the Japanese Forestry Agency's Kanto Regional Forest Office; the Fuji Agriculture and Forestry Office of Shizuoka Prefecture; Fujinomiya City; and others. Under this agreement, the signers are creating a model project for demonstrating the benefits of centrally managing work across adjacent privately and publicly held forests.

Case

Producing Seedlings from Specified Japanese Cedar Mother Trees

In its overseas afforestation operations, Nippon Paper Industries Co., Ltd. developed technology for using cuttings to produce seedlings. It is now using that technology to produce seedlings of specified mother trees* in Kyushu. Amid expectations of expanded regeneration logging and reforestation in areas throughout Japan, the Japanese government is actively promoting the use of environmentally friendly species. Having developed technology that enables the use of shoots as small as 10 cm in length as cuttings (Normally, shoots used for this are 40 cm.), the company is now able to propagate large numbers of cuttings from specified Japanese cedar mother trees in a short time. Currently, cuttings of these trees are being propagated in a large scion plantation located in Hitooshi City in Kumamoto Prefecture.



Seedlings grown from cuttings of specified Japanese cedar mother trees

Amid concerns of a nationwide shortage of seedlings, in general, Nippon Paper Industries is applying its proprietary production technology in locations across the country to produce seedlings that will help to stabilize supply and make forestry in Japan a growth industry.

* Specified Japanese cedar mother trees:

Trees from species the Minister of Agriculture, Forestry and Fisheries has designated as being special for their rapid growth, outstanding CO₂ sequestration capability, and low pollen production.

Case

SGEC-certified Wood from the Kitayama Company-owned Forest Supplied for Use in Building the Mt. Fuji World Heritage Center, Shizuoka

In January 2018, Nippon Paper Industries Co., Ltd. (NPI) and Nippon Paper Lumber Co., Ltd. (NPL) provided lumber to the Exhibition Building Wooden Grid Project of the Mt. Fuji World Heritage Center, Shizuoka.

The exhibition building features latticework walls made completely of SGEC-certified Japanese cypress. Through local and cross-industrial cooperation, it became the first building in Japan to acquire the SGEC/PEFC CoC Project Certification.

NPI supplied lumber for the project from its Kitayama Forest, the first SGEC-certified forest in Japan. NPL managed the supply of lumber to the construction



Mt. Fuji World Heritage Center, Shizuoka

site and is the first SGEC CoC-certified company in Japan. Together, NPI and NPL successfully delivered SGEC-certified wood from the forest where it was sourced to the project site where it was used.

Overseas Afforestation

Growing trees as a renewable resource, and coexisting with local communities

Sustainable Management of Overseas Afforested Areas

Developing an afforestation business that contributes to the local community

Recognizing the importance of mutual development the Nippon Paper Group strives to build positive ties with the local communities in and around its forests. In accordance with our Philosophy and Basic Policy Concerning Raw Materials Procurement (see page 24), we pay particular attention to the concerns of local residents while taking into consideration the cultures and traditions of each region as well as the natural environment and ecosystems. Considerable effort is also placed on promoting educational activities, and creating employment opportunities, within local economies.

- Acquisition of forest certifications (see pages 26-27)
- Engages in forest management that takes into consideration biodiversity (see pages 40-41)
- Coexisting with local communities (Employment support, respect for indigenous people, see page 63)

Tree Farm Initiative

Nurturing renewable wood resources

In similar fashion to the cultivation of crops in the field, the Tree Farm Initiative achieves sustainable procurement of

raw materials through repeated cycles of growing and harvesting trees. The Tree Farm Initiative manifests Nippon Paper Industries Co., Ltd.'s concept for overseas afforestation projects.

Presently, the Company oversees 88 thousand hectares (as of December 31, 2017) of afforested areas in Brazil, Chile, Australia, and South Africa.

● Afforestation projects that help the local ecology

The Nippon Paper Group performs afforestation work on grasslands, former farms and pastures and on harvested plantation land. We select species, focusing mainly on fast-growing Eucalyptus, according to individual climatic conditions and materials available for making paper.

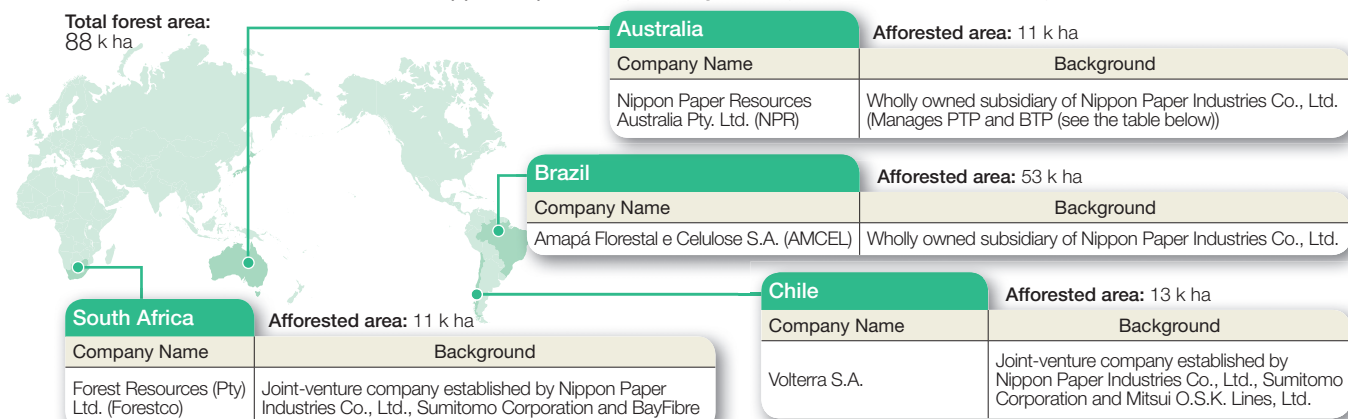
In order to maintain a balance between areas planted with Eucalyptus and the biodiversity needs of each region, we implement appropriate measures and keep native waterside forests where the potential effects on the ecology are large.



Tree planting that preserves riparian forests. (Right) The blue area indicates riparian forests.

Overview of overseas forests under Nippon Paper Group management (as of December 31, 2017)

Total forest area:
88 k ha



* "k ha" = thousand hectares

Status of forest certification acquisition for overseas afforestation projects

Overseas plantation project by operating company	Certification system name (License no.)	Date of acquisition
PTP (Australia)	AFS	June 2006
BTP (Australia)	AFS	April 2006
Volterra (Chile)	FSC® (FSC®C120260) CERTFORCHILE	January 2014, December 2007
Forestco (South Africa)	FSC® (FSC®C012171)	April 2003
AMCEL (Brazil)	FSC® (FSC®C023383) CERFLOR	December 2008, September 2014