

Forest Management and Raw Material Procurement Responsibility

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

With sustainable forest management, biodiversity can be protected. Because forests act to sequester CO₂, using wood resources actually helps to prevent global warming.



Company-owned forest
(Brazil: AMCEL)

Indicators	Key Objectives	Performance (fiscal 2016)
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 schemes	100% of wood used as raw material for paper	100%
Overseas chip and pulp supplier questionnaires	100% of chip and pulp suppliers	100% (Overseas chip suppliers: 22; domestic and overseas pulp suppliers: 14)

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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

Philosophy and basic policy reflecting the opinions of stakeholders

The Nippon Paper Group established its Philosophy and Basic Policy Concerning Raw Materials Procurement in fiscal 2005. In formulating this philosophy and basic policies, a draft proposal was released to the public so as to solicit the opinions of stakeholders in Japan and overseas. The Group considered all of the close to 2,000 comments received, and incorporated several suggestions into revisions made to the draft.

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 conserved.
- 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

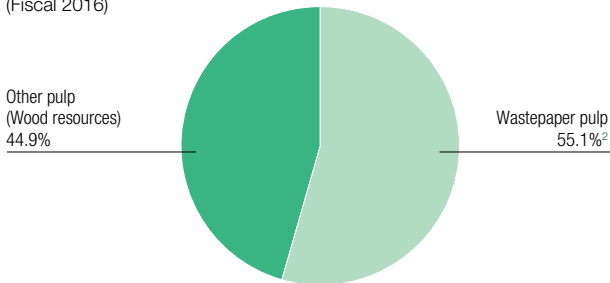
In addition to actively promoting the use of recycled paper, we procure wood resources from sustainably managed forests.

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. 55.1 percent of the raw materials are composed of recycled paper and the remaining 44.9% consists of such wood resources as woodchips. Both types of raw materials are used to produce pulp.

Breakdown of main raw materials for paper manufacturing¹ (Fiscal 2016)



1 Consolidated Group companies in Japan
2 Wastepaper / (Wastepaper + other types of 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

Of the wood raw materials Nippon Paper Industries procures, slightly more than 60% are sourced from overseas and a little below 40%, from Japan. To help ensure stable supplies, overseas procurement is diversified among multiple countries, including Australia.

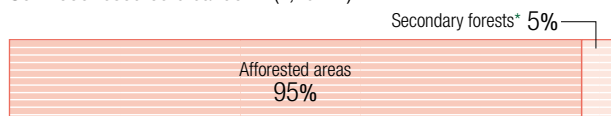
Geographic breakdown of wood raw materials procured by Nippon Paper Industries Co., Ltd. (FY2016) (Bone dry units, kt = kilotonnes)



Hardwood resource breakdown (3,032 kt)



Softwood resource breakdown (1,157 kt)



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

Tree species Nippon Paper Industries Co., Ltd. procured from overseas, and their countries of origin (Fiscal 2016)

Hardwood

Country	Percentage*	Species
Australia	24%	Eucalyptus
South Africa	22%	Acacia
Brazil	20%	Eucalyptus, Acacia
Vietnam	17%	Acacia
Chile	16%	Eucalyptus
Total	100%	

Softwood

Country	Percentage*	Species
Australia	73%	Radiata pine, Caribbean pine
U.S.A.	19%	Douglas fir
Russia	8%	Yezo spruce
Total	100%	

* Sums of individual entries may not equal 100% due to rounding.

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

Japan's Act on Promotion of Use and Distribution of Legally Harvested Wood and Wood Products (the Clean Wood Act) took effect in May 2017. The act includes criteria for confirming the legality of harvested wood – criteria the

Nippon Paper Group has been meeting in its raw material procurement activities since before the Clean Wood Act took effect. Going forward, the Group intends to register with additional third-party institutions maintaining records in support of legal compliance.

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 protection of biodiversity, allowing the Group to practice CSR procurement. This action plan also helps enhance traceability 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)
<http://www.nipponpapergroup.com/csr/forest/procurement/actionplan/index.html> (Japanese only)

Overview of major forest certification programs

Certification program name	Details and features
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 system.
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. In similar fashion to FSC®, PEFC has adopted the CoC certification system. 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. SGEC has also adopted the CoC certification system. Mutual certification with PEFC was approved in June 2016.

* 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 conservation 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	<ul style="list-style-type: none"> 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><small>* In fiscal 2016, 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.</small></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 2016)

	Procurement in Japan	Procurement Overseas
Coverage and Results	414 chip suppliers, 6 pulp suppliers No problems detected under the action plan	22 chip suppliers, 8 pulp suppliers No problems detected under the action plan



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.

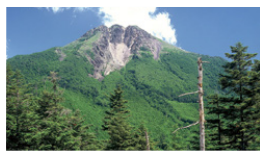
For the Nippon Paper Group, forests are not only an important business resource—as a corporate group whose existence is closely tied to the health and conservation of forests, we recognize and work to manage the integrity of the multifaceted functions forests play within society.

● Maintaining company-owned forests in Japan

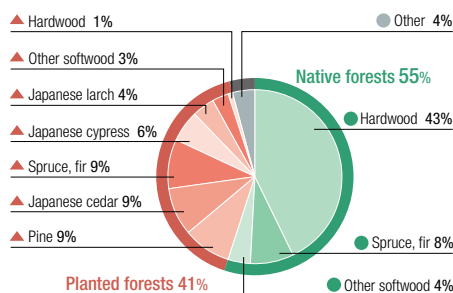
Nippon Paper Industries allocates approximately ¥0.6 billion each year to the maintenance and management of company-owned forests in Japan, which entails the clearing of undergrowth and thinning. As a company which has continued to benefit from and grow through forests and forest products, we are committed to balanced, sustainable forest management that allows forests to fulfill their multifaceted functions—including ones that benefit biodiversity protection and watershed conservation—despite the fact that forests within Japan are not currently economically viable because of the stagnant price of domestic timber.

● Environmental forest designations, biodiversity-conscious forest management

Nippon Paper Industries has designated approximately 20%, or 18 thousand hectares, of forest areas owned in Japan as “environmental forest areas.” In these areas, the logging of trees for the purpose of lumber production is prohibited and the environmental functions of forests (forest ecosystems, watershed conservation, etc.) are conserved.



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



Invigorating Japan's Forest Industry

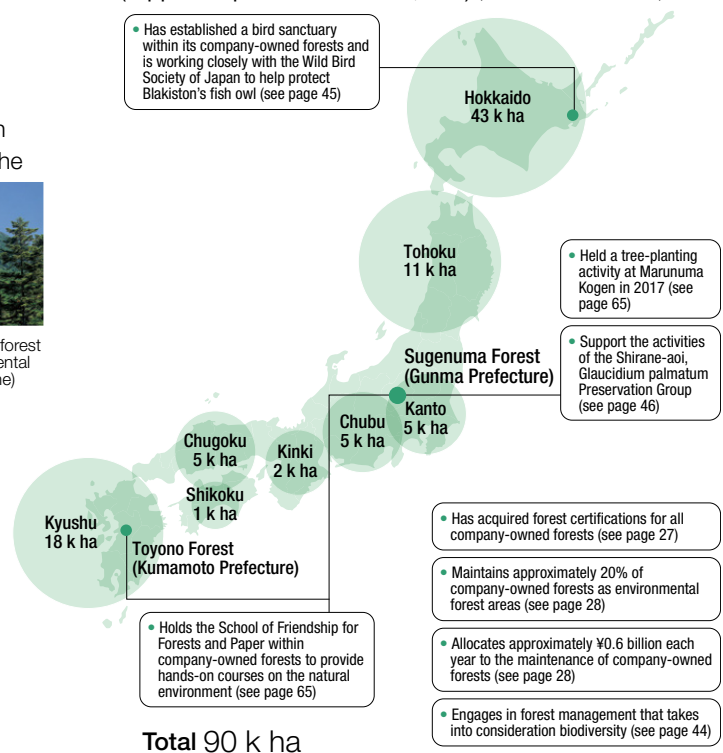
Actively utilizing domestically produced timber while contributing to the prevention of forest deterioration

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.

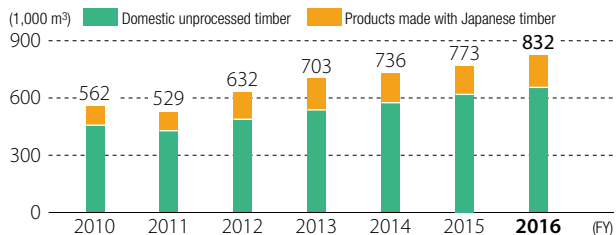
● Promoting the use of domestic timber

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 2016, the company handled approximately 830 thousand m³ of domestically produced materials, and ranked second in its field in Japan. The company aims to lift this figure to 1 million m³, and, to this end, 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, 2017)



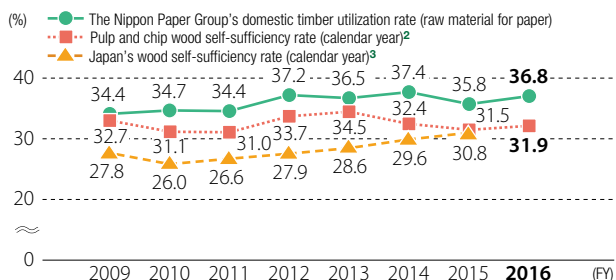
Domestic timber sales results by product type (Nippon Paper Lumber Co., Ltd.)



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

The Nippon Paper Group 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 36.8% in fiscal 2016. 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 together to maintain an efficient road network and systematic thinning operations. The signing of a memorandum of understanding on the advancement of forest management in Kyushu by Nippon Paper Industries Co. Ltd., the Kyushu Regional Forest Office; Oji Paper Co., Ltd.; Sumitomo Forestry Co., Ltd.; and others in 2009 set the stage for later developments. In March 2015, for example, an area covered by an agreement concerning the promotion of forest maintenance in the Itsuki region of Kyushu was designated as the site for a consolidation test project with the participation of the Japan Project-Industry Council's Forestry Regeneration Committee.

In a separate development, a forest management and lumber production agreement was concluded for the Yatsushiro region in March 2014. This groundbreaking wide-area model agreement calls for private-sector forest owners to manage forests in Kyushu collaboratively. Participants in the agreement include Kumamoto Prefecture, Yatsushiro City, the Yatsushiro Shinrin Forest Cooperative, and Nippon Paper Co. Ltd.

Case

Development of Large Scion Plantation for Specified Japanese Cedar Mother Trees

In 2016, Nippon Paper Industries Co., Ltd. and Nippon Paper Lumber Co., Ltd. embarked on an initiative to develop a large scion plantation in Hitoyoshi City, Kumamoto Prefecture. This initiative is a bid to facilitate the quick propagation and full-scale production of cutting seedlings from Japanese cedar mother trees chosen for their excellent growth ability and lower pollen counts.

Nippon Paper Industries has developed an exclusive technology that enables it to propagate cutting seedlings much more quickly than is possible with conventional methods. Nippon Paper Lumber intends to use this technology to increase seedling production in line with demand and will proactively market seedlings, making itself into a stable source of cutting seedlings in the Kyushu region and a contributor to the steady renewal of Kyushu's forests.

Case

Fukushima "Morino Chonai-kai" – Protecting Fukushima's forests

In Fukushima Prefecture, impacts of the Great East Japan Earthquake have caused forestry management and timber operations to stagnate, thereby endangering the watershed and disaster-prevention roles played by forests. Responding to this situation, Nippon Paper Lumber Co., Ltd. and Office Chonai-kai, an environmental NPO, concluded a memorandum of understanding, under which the Fukushima Morino Chonai-kai was launched in July 2016.

Fukushima Morino Chonai-kai comprises a scheme in which Morino Chonai-kai, which was established by Office Chonai-kai in 2005, will be used to promote the thinning operations necessary for protecting forests. These activities will be supported through sales of paper and paper products.

Under a similar memorandum of understanding with Office Chonai-kai, Toppan Printing Co., Ltd. has agreed to produce Fukushima Restoration Support Desktop Calendars and use 150 yen from the sale of each to support forest protection activities in Fukushima Prefecture.

In pursuit of the Fukushima Morino Chonai-kai scheme, Nippon Paper Lumber Co., Ltd. will purchase material from forest thinning operations in Fukushima and use it as raw material for making paper at its Ishinomaki and Iwanuma mills.



Fukushima Restoration Support Desktop Calendar

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. 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 44-45)
- 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 91 thousand hectares (as of December 31, 2016) 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.

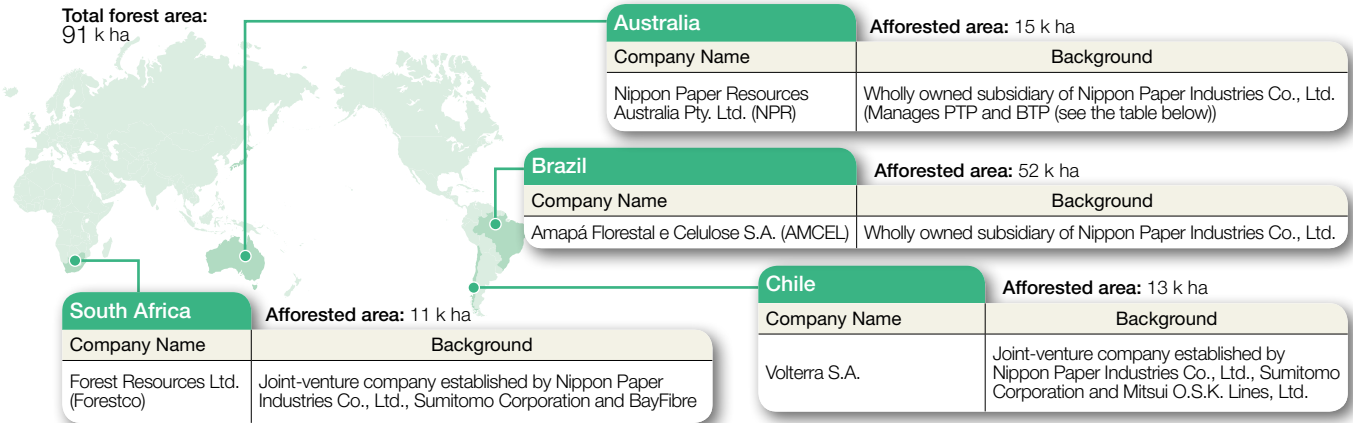
In order to maintain a balance between areas planted with Eucalyptus and the biodiversity needs of each region, we implement appropriate measures and keep vegetation along rivers and water courses where the potential effects on the ecology are large.



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

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

Total forest area:
91 k ha



* "k ha" = thousand hectares

Status of forest certification acquisition for overseas afforestation project

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